Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 h

En

PES 6 P 110 A 720/3 RS 356 Komb.-Nr. 0 402 036 028 ROV 300/600-1050 PA 367 KR PLE-MaB = 0,740"-0,820"

9400/30003

COMPANY

MACK ET 673 DOM

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from 80C) Port closing at prestroke (2.75-2.9E) Control rod travel Fuel delivery Soning pre-tensioning (torque-control valve) Fuel delivery Difference Rotational speed Correror rod om³/ cm³/100 strokes 100 strokes cm3/100 strokes TOW HOUSE 1000 12.5+0.1 17,8-18,0 0,6 300 6.6-6.2 0.7-1.7 0,6

Adjust the fuel delivery from each outlief according to the values in

B. Governor Settings

Upper rated s	peed	_		Intermediate rated speed				Lower rated	speed	_		Sliding stooms travel	
	rev/min	Control rod travel	(9)	Degree of deflection		Combrol :	rod bo	od Degree of Control rod travel		rod .	1 . (
	rod ware		(a)	of control	Printer Services	-	0	of control		-	(3)	-	
1	2	3		4	5	•		7	8	9		10	11
max.	1050	16,2-17	,8	-	•	-	1	a. 18,5	250	9,8-1	1,3	300	0,9-2,0
ca.63	11,5 4,0 1280	1090-11 1175-12 0 - 1	05					(7,9-8 3,8-5 710 =	.2		3,1-3,6 4,7-5,4 7,8

Torque control travel a *

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery Control rod stop Test of temp 40°C (104°F) (2)		Rotational speed 20 immigration speed	Fuel dela high idle :	en characteristics(3)	Starting Idle switchin	•	Torque travel	Control (5)
100/1000	cm³/1000 strokes	revision 😐	-	cm ¹ /1000 strokes	: Orași Camili	cmit1000 strokes	-	1000
1	2	3	•	S	6	7	8	•
1000	177,5-179,5	1090-1100*	750	170,5-173,5	100	110,0-170,0 = ca.21 mm	1050 1000	12,4+0,1 12,5
			600	153,0-156,0 PLE		RM		12,6+0,1 11,8+0,1
			300	98,0-106,0				11,2+0,1
								<u></u>

Chucking values in bracking

* 1 mm ines control rod travel then col 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11.0 m 2

1. Edition

PES 6 P 110 A 720/3 RS 3045 Komb.-Nr. 9 400 231 029

US-RQV 300/600-1050 PA 456 KR supersedes PLE-MaB 0,740" - 0,820"

company

MACK **ETZ 673** 260 PS

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	rtroke	(3.15-3.35)	mm (from BDC)	mm (from BDC)								
Rotational speed revirmin		Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6						
:000	12,90,1	16,9-17,1	0,4									
300	5,5-5,7	1,1-2,1	0,4									

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	bed			Lower rated	speed			Skiding sleeve trave		
deflection		Control rod (travel		Degree of deflection		Contr			Degree of deflection		Control travel	rod		0	
	rod trave	userumu (of control	rev/min	mm S	(①	of control lever 7	194/mm 8	mm 9	3	rev/min 10	mm 11	
1	2	3	_	•	-	6			· -	-	-		-		
max.	1050	16,2-17,	8	-	-		-		ca.18,5	250	9,8-1	1,3	-	-	
ca.63,5	4,0	1090-110 1175-120)5								7,9-8 3,8-5	,2			
	1250	0 - 1,	Ü						③	000-	710 =	2,0			

Torque control travel & =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-road di Control-roa Test oil ten	I de la companya del companya de la companya del companya de la co				Starting idle switchin	. 0	Torque- travel	Control rod
r ay/mi n	c/h³/1000 strokes	revirus 🐠	rev/min	cm ³ /1000 strokes	revirous	cmil/1000 strokes	-	mm travel
1	2	3	4	5	6	7	8	9
1000	169,0-171,0	1090-1100*	750	169,5-172,5	100	110,0-170,0		12,9+0,1 12,9+0,1
			600	149,5-152,5 PLE			900 750	12,9+0,1 12,9+0,1
			300	107,0-109,0				12,9+0,1 11,6+0,1

Chacterie velues in brackels

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 1. Edition and Governors

VDT-WPP 001/4 MAC 11,0 k 2 40

PES 6 P 110 A 720/3 RS 3036 US-RQV 300/600-1050 PA 520 K Komb.-Nr. 9 400 231 049

PLE-MaB = 0.740"-0.820"

supersedes company

ename

MACK **ETSZ 676** 285 PS

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Port closing at prestroke (2 75-2 95)

		(2,75-2,33)						
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)		
rev/min	mm.	cm ³ /100 strokes	100 strokes	men.	cm ³ /100 strokes	mm		
1	2	3	4	2	3	6		
1000	13,6+0,1	20,9-21,1	0,4					
300	5,0-5,2		0,4					
			<u> </u>	l				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper lated t			Intermediate	e rated sp	l .	Lower rated	speed	1	Sliding sleeve trave	
Degree of deflection of control	rev/min Control rod travel	Control rod travel	of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever	mm 2	rev/min (2s) lever	rev/min	mm (4)	lever 7	rev/min	mm (3)	rev/min 10	mm 11
	2070	44 0 47 0		-						
max.	1070	16,2-17,8	-	-	-	ca.17,5	250	9,4-11,0	-	-
ca.63	12,6	1090-1100	-				300	7,9-8,1		
ca.03	4,0	1170-1200	5					3,8-5,2		
i	1230	0 - 1,0					685-7	745 = 2,0		
						③				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 20 Imitation intermediate speed	Fuel dein high ide s	rery characteristics (5a)	Starting Idle switchin	0	Torque-control 5 travel Control ro		
rev/min	cfh³/1000 strokes	rev <i>i</i> min 4a	rev/min	cm ³ /1000 strokes	rev/min	cmil/1000 strokes	rev/mm		
1	2	3	4	5	6	7	8	9	
1000	209.0-211,0	1090-1100	800	211,5-214,5	100	110,0-170,0	1050 1000	13,5+0,1 13,6	
			600	241,0-244,0 PLE				13,6+0,1 14,0+0,1	
			300	129,0-137,0			600	15,3+0,1 15,2+0,1	
				<u> </u>	<u> </u>				

Checking values in brackets

* 1 mm less control rod travel then col. 2

Festoil-ISO 4113

VDT-WPP 001/4 MAC 11,0 m 4

1. Edition

Komb.-Nr. 9 400 231 035

PES 6 P 110 A 720/3 RS 3045 US-RQV 300/600-1050 PA 463 K PLE-Maß 0,740"-0,820"

supersedes company

engine

MACK ETZ 675

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min		Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,0+0,1	15,4-15,6	0,4			
300	5,5-5,7	1,1-2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degree of deflection of control lever	rev/min Control rod travel mm	Control rod ta travel mm rev/miri 2a	Intermediate Degree of deflection of control lever	rated sports rated	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1050	16,2-17,8	-	-	-	ca.18,5		9,8-11,3 7,9-8,1	-	-
ca.63	11,0 4,0 1250	1090-1100 1165-1195 0 - 1,0				9	400 670-	3,8-5,2 730 =2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F) 2 rev/min cm²/1000 strokes		imitation intermediate speed	nigh idle :			fuel delivery 6 ng point cm*1000 strokes	Torque- travel	Control rod travel
1	2	3	4	5	rev/min	7	8	9
1000	154,0-156,0	1090-1100 3	800 600 300	170,5-173,5 198,0-201,0 PLE 110,0-118,0	100	110,0-170,0	1050 1000 800 700 600 500	12,0 12,6+0,1 13,4+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2

Test Specifications Fuel Injection Pumps 1 1. Edition and Governors

VDT-WPP 001/4 MAC 11,0 i 3 40

PES 6 P 110 A 720/ RS 3036 Komb.-Mr. 9 400 231 002

and fuel-injection test tubing

ROV 300/450-900 PA 400 KR $PLE-Ma\beta = 0.740" - 0.820"$

supersedes company:

MACK

Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015

ETAZ 673 c DOM

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,4-2,5 Portclosing at prestroke (2,35-2,55)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	14,4+0,1	21,0-21,2	0,4			
300	5,0-5,2	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

0	teffection of control	rev/min Control rod travel mm	Control rod travel mm rev/min 28	of control	rated sport	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
-	max.	970	16,2-17,8	ca.18,5	250	9,8-11,3	-	-	-	250	0,2-1,2
	ca.57	13,4 4,0 1200	940-950 1075-1105 0 - 1,0		400	7,9-8,1 3,8-5,2 635 = 2,0	39			480 710 950	3,8-4,3 5,5-5,9 8,2

Torque control travel a

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 ilmitation intermediate speed		delivery characteristics 5a Starting fuel delivery idle speed 5b Starting point 6				Control cod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
900	213,0-215,0	940-950*	725 600 300	220,5-223,5 197,5-200,5 PLE 99,0-107,0	100	110,0-170,0	900 725 600 500	14,4 14,6 13,6+0,1 13,2+0,1

Checking values in brackets

1 mm less control rod travel then col. 2

Test Specifications Fuel Injection Pumps (1) VDT-WPP 001/4 MAC 11,0 z 1 and Governors

1. Edition

En

US-PES 6 P 110 A 720 RS 6005 US-RQV 300/400-900 PA 575-1K supersedes $PLE-Ma\beta = 0.740" - 0.820"$ Komb.-Nr. 9 400 231 137 company. Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015 MACK E 6 - 315 R 315 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	itroke	2,4-2,5 (2,35-2,55)	mm (from BDC)							
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)				
rev/min	mm 2	cm ³ /100 strokes	100 strokes	mm 2	cm ³ /100 strokes	mm 6				
900	14,7+0,1	23,3-23,5	0,4							
300	5,1-5,3	1,3-2,3	0,4							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel	Control rod travel mm rev/min (28)	Intermediate Degree of deflection of control lever		Control rod	Lower rated Degree of deflection of control lever	speed	Control rod travel	Sliding s	leeve travel
1	2	3	4	5	6	7	8	9	10	11
max.	1020	15,2-17,8	-	-	•	ca.19	250	9,4-10,8	-	•
ca.61	13,7 4,0 1130	940-950 1070-1100 0 - 1,0				3	300 400 530-	7,9-8,1 3,3-4,7 590 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm	1,,,,,,	saudenin (4a)		peed (5b)	switchin		Innin A	Control rod
1 2	h ³ /1000 atrokes .	rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min 8	mm 9
900 23	32,5-234,5	940-950 *	725 650 800	244,0-247,0 229,5-232,5 PLE 108,0-116,0	100	110,0-170,0	900 800 725 650 500	14,6 14,9+0,1 14,9+0,1 14,3+0,1 13,2+0,1

Chucking values in brackets

* 1 mm less control rod travel then col. 2

Test Specifications Fuel Injection Pumps 1 and Governers

VDT-WPP 001/4 MAC 11,0 r

1. Edition

US-PES 6 P 110 A 720/3 RS 6003 Komb.-Nr. 9 400 231 059

US-ROV 300/600-1050PA542K $PLE-Ma\beta = 0.740" - 0.820"$

supersedes

MACK

Note VDT-I-MAC 002!

company

EM 6 - 237 235 PS

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3,5-3,6 Port closing at prestroke (3,45-3,65) mm

mm (from BDC)

FOIL GIOS IN BILL PIECE		(3,40-3,00)									
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6					
1000	12,3+0,1	17,6-17,8	0,4								
300	5,2-5,4	1,1-2,1	0,4								

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding sleeve travel	
Degree of deflection of control	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever		rev/min (28)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1125	15,2-17,8	,	-	-	ca.21	250 300	9,5-11,0 7,9-8,1	-	-
ca.61	11,3 4,0 1230	1090-1100 1170-1200 0 - 1,0				(3a)	400 700-	3,8-5,2 760 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		limitation intermediate speed	high idle s	rery characteristics 5a	Starting Idle switchir	\circ	Torque- travel	Control od
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ⁹ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	175,5-177,5	1090-1100*	800 600 300	180,5-183,5 199,5-202,5 PLE 106,0-114,0	100	110,0-170,0	1050 1000 800 700 600 500	12,3 12,7+0,1 13,0+0,1 13,5+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2

restoil-ISO 4113

VDT-WPP 001/4 MAC 11,0 u

Test Specifications Fuel Injection Pumps (1) and Governors

1. Edition

OV 200 (FOO DED F

US-RQV 300/500-950 PA 548 K PLE-MaB = 0.740" - 0.820"

supersedes

company

engine:

MACK

....

Komb.-Nr. 9 400 231 065

PES 6 P 110 A 720/3 RS 6002

Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015 E 6 - 315 315 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
14,7+0,1	23,2-23,4	0,4			
5,1-5,3	1,4-2,4	0,4			
2	14,7+0,1	3 14,7+0,1 23,2-23,4	cm ³ /100 strokes 100 strokes 4 14,7+0,1 23,2-23,4 0,4	cm ³ /100 strokes 100 strokes mm 2 14,7+0,1 23,2-23,4 0,4	100 strokes mm cm³/100 strokes mm cm³/100 strokes 3 14,7+0,1 23,2-23,4 0,4

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degree of deflection of control lever	rev/min Control rod travel	Control rod ta travel mm rev/min (28)	Intermediate Degree of deflection of control lever		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1020	15,2-17,8	-	-	-	ca.19	250 300	9,4-10,8 7,9-8,1	-	-
ca.63	13,7 4,0 1180	990-1000 1110-1140 0 - 1,0				38)	400 535-	3,3-4,7 595 =2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	high idle s	ا ھ	idle switchir	ng point	travel	Control 5 Control rod travel
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
900	232,0-234,0	990-1000 *	725	244,0-247,0	100	110,0-170,0	950 900	14,6+0,1 14,7
			650	226,5-229,5 PLE			800 725	14,9+0,1 14,9+0,1
			300	107,5-115,5			650 500	14,3+0,1 13,2+0,
					<u> </u>			

Geschäftsbereich KM. Kundendienst. Kfz-Ausrüstung c by Robert Bosch GmbH. D-7 Stuttgart 1. Postfach 50. Printed in the Federal Republic of Germany Imprime en République Federale d'Allemagne par Robert Bosch GmbH.

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11.0 r 2 1. Edition

US-PES 6 P 110 A 720/3 RS 6003 US-RQV 300/600-1050PA559K Komb.-Nr. 9 400 231 073 $PLE-Ma\beta = 0.740" - 0.820"$ MACK Note VDT-I-MAC 002! EME 6 - 285 Values only apply to test nozzle-and-holder assembly 0 681 343 009 285 PS 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Port closing at prestroke Spring pre-tensioning (torque-control valve) Fuel delivery Difference Control rod **Fuel delivery** Rotational speed | Control rod travel

rev/m	nin	mm 2	cm³/100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
10	00	12,7+0,1	20,6-20,8	0,4			
3	00	4,8-5,0	1,2-2,2	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed rev/min	Control rod (18	Intermediat Degree of	e rated sp	eed Control rod	Lower rated Degree of	speed	Control rod	Sliding sleeve travel	
of control	Control rod travel mm		of control	rev/min	mm 4	deflection of control lever	rev/min	mm 3	rev/min	mm
max.	1120	15,2-17,8	 	-	-	ca.20	250	9,5-11,0		-
		,								
ca.61,5	11,7	1090-1100					300	7,9-8,1		
	4,0	1185-1215					400 710-	4,0-5,4 770 =2,0		
	1240	0 - 1,0				<u>3a</u>				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	ory characteristics (5a) Starting fuel delivery (6) idle switching point			Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	206,0-208,0	1090-1100*	800 600 300	208,5-211,5 228,5-231,5 PLE 105,0-113,0	100	110,0-170,0	1050 1000 800 700 600 500	12,6+0,1 12,7 13,1+0,1 13,5+0,1 13,8+0,1 13,4+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 0 402 036 703

and fuel-injection test tubing

ROV 300/450-950 PA 369 KR $PLE-Ma\beta = 0.740"-0.820"$

supersedes company:

1 680 750 015

MACK

Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009

ETAZ 673 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2.35-2.55)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
900	15,9+0,1	23,2-23,4	0,4			
300	5,6-5,8	1,5-2,5	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s Degree of deflection of control lever	rev/min Control rod travel mm	Control rod (1a travel mm rev/min (2a	of control		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Stiding s rev/min 10	mm
max.	970	16,2-17,8	-	-	-	ca.18,5	250	9,8-11,3	250	0,2-1,2
ca.63	14,9 4,0 1100	990-1000 1115-1145 0 - 1,0	-			(3a)	300 400 576-6	7,9-8,1 3,8-5,2 535 =2,0	480 710 950	3,8-4,3 5,5-5,9 8,2

Torque controi travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 2b firmitation intermediate speed	Fuel deliv high idle s	rery characteristics 5a	Starting Idle switchir	•	Torque- travel	Control 5 Control rod travel
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
900	231,5-233,5	990-1100*	725	231,5-234,5	100	110,0-170,0 = ca. 12,0	950 900	15,8+0,1 15,9
			60C	105,5-108,5 PLE		mm RW	700	16,0+0,1 15,9+0,1
			300	103,5-111,5				max.15,2 14,7+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 w

1. Edition

PES 6 P 110 A 720/3 RS 6005 Komb.-Nr. 9 400 231 087

US-RQV 300/600-1050 PA 586 K

company:

MACK

Note VDT-I-MAC 002!

 $PLE-Ma\beta = 0.740" - 0.820"$

engine.

EM 6 - 285

Values only apply to test nozzle-and-holder assembly 0 681 343 009

285 PS

and fuel-injection test tubing

1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	13,3+0,1	21,0-21,2	0,4			1
300	4,9-5,1	1,2-2,2	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rev/min Control rod travel	Control rod travel mm rev/min 2a	Intermediate Degree of deflection of control lever	rev/min	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1120	15,2-17,8	-	-	-	ca.20	250	9,8-11,3	•	-
ca.62	12,3 4,0 1240	1090-1100 1185-1215 0 - 1,0				3a	300 400 690-	7,9-8,1 3,8-5,2 750 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (Imitation Intermediate speed	\smile $ $	Fuel deliv high idle s	ery characteristics 58 peed 5b	Starting fuel delivery 6 Idle switching point		Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min	4	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	
1	2	3		4	5	6	7	8	9
1000	210,0-212,0	1090-1100	*	800	213,0-216,0	100	110,0-170,0	1050 1000	
				600	240,0-243,0 PLE			900 800 600	13,6ю,1
				300	132,5-140,5			500	

Checking values in brackets

* 1 mm less control rod travel than col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 x 1. Edition

PES 6 P 110 A 720 RS 6006 Komb.-Nr. 9 400 231 089

US-ROV 300/600-1050 PA 587 K PLE-MaB = 0.740" - 0.820"

supersedes

company

MACK EM 6 - 237

Note VDT-I-MAC 002!

engine: Values only apply to test nozzle-and-holder assembly 0 681 343 009

224 PS

1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,5-3,6 (3.45-3.65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,4+0,1	17,6-17,8	0,4]
300	5,3-5,5	1,1-2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated :	í		Intermediate	rated sp	eed Control rod	Lower rated	speed	Control rod	Sliding sleeve travel	
deflection of control	rev/min Control rod travel		of control		travel	deflection of control	rev/min	travel	rev/min	mm (1)
lever 1	mm 2	rev/min (2)	lever 4	rev/min 5	e (4)	7	8	9	10	11
max.	1125	15,2-17,8	-	-	**	ca.21	250	9,5-11,0	1	-
ca.61	11,4 4,0 1230	1090-1100 1170-1200 0 - 1,0				3a	300 400 700-	7,9-8,1 3,8-5,2 760 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		\sim			idle		travel	Control rad
\sim	rev/min	•	rev/min	cm ³ /1000 strokes		cm ² /1000 strokes	rev/min	travel mm
	3		4	5	6	/	<u> </u>	9
5,5-177,5	1090-1100	*	800 600	180,5-183,5	100	110,0-170,0	1000	_
			300	PLE 106,5-117,5			600	13,1+0,1 13,4+0,1 13,2+0,1
	/1000 strokes	/1000 strokes rev/min	/1000 strokes rev/min 3	rev/min 3 rev/min 4 rev/min 3 800 600	rev/min 3 rev/min cm³/1000 strokes 5 1090-1100 * 800 180,5-183,5 600 PLE	rev/min 3 rev/min cm³/1000 strokes rev/min 3 cm³/1000 strokes rev/min 6 rev/min 6 1000 strokes 1	rev/min 3	rev/min 3 4 5 5-177,5 1090-1100 * 800 180,5-183,5 100 110,0-170,0 1000 800 PLE 300 106,5-117,5

Geschäftsbereich KH. Kundendienst Kfz-Ausrustung c by Robert Bosch GmbH. D-7 Stuttgart 1 Positisch 50 Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Chucking values in brackets

1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 VDT-WPP 001/4 MAC 11,0 x 1 and Governors

1. Edition

US-PES 6 P 110 A 720 RS 6006 US-RQV300/600-1050 PA 621 K Komb.-Nr. 9 400 231 101

 $PLE-Ma\beta = 0.740"-0.820"$

supersedes company

MACK

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

EM 6 - 250 250 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

NOW CIOSING at his?	HONE	(3, 15-3, 35)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Rotational speed		Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/mเก	mm	cm³/100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	0
1000	11,5+0,1	18,6-18,8	0,4			
300	4,5-4,7	1,1-2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel	ti #AGI		Intermediate Degree of deflection of control lever	rated spe rev/min 5	control rod travel mm	4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	Sliding s rev/min 10	mm 11
max.	1125	15,2-17	,8	-	-	-		ca.20	250	9,5-11,0	-	-
ca.60,5	10,5 4,0 1230	1090-11 1170-12 0 - 1						38	300 400 700-	7,9-8,1 3,8-5,2 760 =2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil tem, \$6°C (104°F)		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a peed 5b	Starting idle switchin	fuel delivery 6	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	185,5-187,5	1090-1100 *	850	197,5-200,5	100	110,0-170,0	1050 1000	11,4+0,1 11,5
			630	209,5-212,5 PLE			850 750	11,8+0,1 12,0+0,1
ŕ			500	146,5-154,5			630 500	12,6+0,1 12,2+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 r 3 1. Edition

US-PES 6 P 110 A 720/3 RS 6003 US-RQV 300/600-1050PA593K Komb.-Nr. 9 400 231 097

 $PLE-Ma\beta = 0.740"-0.820"$

supersedes

MACK EM 6 - 250

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015 250 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,2-3,3Port closing at prestroke mm (from BDC) Fuel delivery Spring pre-tensioning (torque-control valve) Control rod Difference Control rod Fuel delivery Rotational speed 100 strokes cm³/100 strokes cm3/100 strokes mm rev/min mm 1000 11,5+0,1 0,4 18,7-18,9 300 5,2-5,4 1,1-2,1 0,4

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediat	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
	rev/min Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		①
	rod travel mm	mm rev/min (2	of control	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1_	2	3	4	5	6	7	8	9	10	11
max.	1125	15,2-17,8	-	-	_	ca.20	250	9,5-11,0	-	-
ca.60,5	10,5 4,0 1230	1090-1100 1170-1200 0 - 1,0)			(3a)	300 400 700-	7,9-8,1 3,8-5,2 760 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe	stop	Irmitation	Fuel deliv	very characteristics 58	idle	\circ	Torque-control (5		
Test oil temp. 40°C (104°F) (2) rev/min cfh³/1000 strokes		rev/min			switchir revimin		rev/min	Control rod travel mm	
1	2	3	4	5	6	7	88	9	
1000	186,5-188,5	1090-1100 *	850 630 800	189,0-192,0 211,5-214,5 PLE 143,0-151,0	100	110,0-170,0	1000 850 750 630	11,4+0,1 11,5 11,8+0,1 12,0+0,1 12,6+0,1 12,2+0,1	

Checking values in brackets

* 1 mm less control rod travel than col. 2

41

Test Specifications Fuel Injection Pumps 1. Edition and Governors

VDT-WPP 001/4 MAC 11,0 x 5

US-PES 6 P 110 A 720 RS 6006 Komb.-Nr. 9 400 231 159

US-ROV 300/600-1050PA621-4K $PLE-Ma\beta = 0.740"-0.820"$

supersedes company

MACK EME 6 - 300 300 PS

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke (3	,15-3,35)	mm (from BDC)			
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
14,0+0,1	21,6-21,8	0,4			
5,9-6,1	1,7-2,7	0,4			
	Control rod travel mm 2 14,0+0,1	Control rod travel Fuel delivery cm ³ /100 strokes 3 14,0+0,1 21,6-21,8	Control rod travel Fuel delivery Difference cm³/ mm cm³/100 strokes 100 strokes 2 3 4 14,0+0,1 21,6-21,8 0,4	Control rod travel mm	Control rod travel mm

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	rev/min	Control rod	Intermediate	rated sp	eed Control rod	Lower rated speed Degree of Control rod			Sliding sleeve travel	
	Control rod travel mm	travel	deffection of control lever	rev/min 5	travel 4	deflection of control lever 7	rev/min	travel	rev/min 10	mm 11
max.	1120	15,2-17,8	-	-	-	ca.20	250	9,8-11,3	-	-
ca.63	13,0 4,0 1255	1090-1100 1190-1220 0 - 1,0				39	300 400 690-	7,9-8,1 3,8-5,2 750 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 5a peed 5b	Starting Idle switchir	_	Torque- travel	Control rod
rev/min cm³/1000 strokes		rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm¥1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1050	215,5-217,5	1090-1100 *	850 630 800	214,5-217,5 233,5-236,5 PLE 120,0-128,0	100	110,0-170,0	1050 950 850 750 630 500	14,0+0,1 14,1+0,1 14,5+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2



Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAC 11,0 v 3

1. Edition

US-PES 6 P 110 A 720/3 RS 6006 US-RQV 300/600-950PA621-6K supersedes $PLE-Ma\beta = 0.740" - 0.820"$ Komb.-Nr. 9 400 231 169 Note VDT-I-MAC 002!

MACK EME 6 - 300 R

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

travel			travel	Fuel delivery cm ³ /1 00 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
14,2+0,1	21,8-22,0	0,4			
5,5-5,7	2,0 - 2,3	0,4			
1	mm 2 14,2+0,1	cm ³ /100 strokes 2 3 14,2+0,1 21,8-22,0	ravel cm ³ /100 strokes 100 strokes 2 3 4 14,2+0,1 21,8-22,0 0,4	travel cm³/100 strokes cm³/ 100 strokes cm²/ 100 strokes	travel cm³/100 strokes cm³/100

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection of control	Control rod travel	Control rod travel 1a mm 2a	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travei	rev/min	①
lever	mm 2	3	4	5	6	7	8	9	10	11
max.	1020	15,2-17,8	-	-	-	ca.20	250	9,8-11,3	-	-
ca.62	13,2 4,0 1155	990-1000 1100-1130 0 - 1,0				<u>3</u>	300 400 590-	7,9-8,1 3,3-4,7 650 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro- Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	ery characteristics 5a	Starting idle switchin	_	travel		
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min cm³/1000 strokes		rev/min	travel mm	
950	217,5-219,5	990-1000	850 630 800	215,0-218,0 239,5-242,5 PLE 115,0-123,0	100	110,0-170,0	950 850 750 630 500	14,3+0,1 14,7+0,1 15,1+0,1	

Chucking values in brackets

1 mm less control rod travel then col. 2



AA6

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 x 3

engine.

1. Edition

US-PES 6 P 110 A 720 RS 6006 US-RQV 300/600-1050PA621-2K

PLE-Maß = 0.740"-0.820"

supersedes MA(

MACK EME 6 - 250 250 PS

Note VDT-I-MAC 002!

Komb.-Nr. 9 400 231 155

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3.15-3.35) mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	11,9+0,1	18,9-19,1	0,4			
300	6,3-6,5	1,4-2,4	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1120	15,2-17,8	-	-	-	ca.20	250	9,8-11,3	~	-
ca.62	10,9 4,0 1240	1090-1100 1165-1195 0 - 1,0				3a)	300 400 690-	7,9-8,1 3,8-5,2 750 =2,0		

Torque control travel a =

mit

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deli- high idle :	very characteristics 5a speed 5b	Starting Idle switchin	0	Torque-control 5 travel Control ro	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1050	188,5-190,5	1090-1100 *	850 630 800	197,5-200,5 210,5-213,5 PLE 134,0-142,0	100	110,0-170,0		12,0+0,1 12,2+0,1 12,6+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

F +>

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 w 1

1. Edition

US-PES 6 P 110 A 720 RS 6005 US-ROV 300/600-1050PA586-2K Komb.-Nr. 9 400 231 131

PLE-Maß 0,740"-0,820"

supersedes

engine

company

MACK EM 6 - 285

Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015

285 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2.75-2.95)	mm (from BDC)		·	
Rotational speed	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
<u> </u>		3	 ` 			
1000	13,4+0,1	21,2-21,4	0,4			
300	4,9-5,1	1,2-2,2	0,4			
				:		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate rated speed				Lower rated	speed	Slidings	leeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control ro travel mm 6	4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm	rev/min	mm 11
max.	1120	15,2-17	,8	-	-	_		ca.20	250	9,8-11,	3 -	-
ca.62	12,4 4,0 1240	1090-11 1185-12 0 - 1						<u></u>	300 400 690-	' 7,9-8,1 3,8-5,2 750 =2,0	!	

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2t limitation intermediate speed	high idle s	very characteristics 5a	Starting Idle switchir	ng point	Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min 44	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	211,5-213,5	1090-1100 *	800 600	213,0-216,0	100	110,0-170,0	1050 1000 800	13,4 13,8+0,1
			800	PLE 147,0-155,0			700 600 500	14,9+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 j 1. Edition

US-PES 6 P 110 A 720/3 RS 6009 Komb.-Nr. 9 400 231 149

US-RQV 300/600-1050PA543-2K supersedes PLE-MaB = 0.740"-0.820"

MACK

Note VDT-I-MAC 002!

Note VDI-I-MAC UUZ! Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

EE - 260 260 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	12,0+0,1	16,6-16,8	0,4			
300	6,0-6,2	1,1 - 2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection of control	peed rev/min Control rod travel mm	Control rod (1a) travel mm rev/min (28)	Intermediate Degree of deflection of control lever	rated spore	Control rod travel	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1120	15,2-17,8	-	_	-	ca.20,5	250	9,8-11,3	-	-
ca.61,5	11,0 4,0 1225	1090-1100 1165-1195 0 - 1,0				3 a)	400	7,9-8,1 3,8-5,2 -750=2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) Ilmitation intermediate speed	Fuel dein high idle s	rery characteristics Sa	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ⁹ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1050	166,0-168,0	1090-1100 *	750 600	171,5-174,5 159,5-162,5 PLE	100	110,0-170,0	1050 1000 900 750	12,0+0,1 12,1+0,1
			800	123,0-131,0			600 500	11,5+0,1

Checking values in brackets

° 1 mm lass control rod travel then col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 i 7

1. Edition

PES 6 P 110 A 720/3 RS 3036 US-RQV 300/450-950 PA 521 K Komb.-Nr. 9 400 231 051

 $PLE-Ma\beta = 0.740"-0.820"$

supersedes company:

Note VDT-I-MAC 002!

MACK

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015

ETSZ 673 A 315 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,4-2,5 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	(2,35-2,55) Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	14,7+0,1	22,7 - 22,9	0,4			
300	4,8-5,0	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	ee d	Lower rated	speed		Sliding sleeve travel	
deflection	rev/min Control	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
of control iever	rod travel mm		lever	rev/min	mm 4	lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	970	16,2-17,8	-	-,	-	ca.18	250	9,7-11,2	-	-
ca.63	13,7 4,0 1200	990-1000 1100-1130 0 - 1,0				(3a)	300 400 590-6	7,9-8,1 4,0-5,5 550 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roi Test oil ten		Rotational-speed 2b limitation intermediate speed			Starting Idle switchin	\circ	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
900	227,0-229,0	990-1000 *	725	235,5-238,5	100	110,0-170,0	950 900	14,6+0,1 14,7
			650	219,0-222,0 PLE			725	14,9+0,1
			300	103,0-111,0			650	14,3+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.83

Geschäftsbereich KM. Kundendienst. Kfz-Ausrustung. & by Robert Bosch GmbH, D-7. Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch. GmbH.

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1

and Governors

 $VDT-WPP\ 001/4\ MAC\ 11,0\ x\ 4$

1. Edition

US-PES 6 P 110 A 720 RS 6006 US-RQV 300/600-1050PA621-3K

supersedes

Komb.-Nr. 9 400 231 157 Note VDT-I-MAC 002!

 $PLE-Ma\beta = 0.740"-0.820"$

company engine.

MACK EME 6 - 300

Values only apply to test nozzle-and-holder assembly 0 681 343 009

300 PS

and fuel-injection test tubing

1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3.15-3.35)	mm (from BDC)								
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fue! delivery	Spring pre-tensioning (torque-control valve)					
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm					
1	2	3	4	2	3	6					
1050	14,0+0,1	21,3-21,5	0,4								
300	5,9-6,1	1,7-2,7	0,4								

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	ed	Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	(a) (28)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1120	15,2-1	7,8	-	-	-	ca.20	250	9,8-11,3	-	-
ca.63	13,0 4,0 1255	1090-1 1190-1 0 -					(3a)	300 400 690-	7,9-8,1 3,8-5,2 750 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2b) imitation intermediate speed		Fuel deliv	peed 50	Starting idle switchin	_	Torque- travel	Control (5) Control roc travel
rev/min	cm³/1000 strokes	rev/min	•	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	
1050	212,5-214,5	1090-1100	*	850 630 800	210,0-213,0 235,0-238,0 PLE 128,0-136,0	100	110,0-170,0	950 850 750	14,0+0,1 14,1+0,1 14,6+0,1 15,2+0,1

Checking values in brackets

* 1 mm less control rod travel than col 2

3.83 Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung. E. by Robert Bosch GmbH. D-7. Stuttgart 1. Positach 50. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 v 1. Edition

En

US-PES 6 P 110 A 720 RS 6006 US-RQV 300/600-950 PA621-8K supersedes Komb.-Nr. 9 400 231 173 PLE-Maß = 0.740"-0.820" company Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(3 15-3 35)	mm (from BDC	mm (from BDC)								
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6						
950	11,7+0,1	18,1-18,3	0,4									
300	5,2-5,4	1,8-2,8	0,4									

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel mm	Control rod travel mm rev/min (2a)	Intermediate Degree of deffection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1020	15,2-17,8	-	-	-	ca.18	250 300	9,8-11,3 7,9-8,1	-	
ca.61	1 0 ,7 4,0	990-1000 1065-1095				39		3,3-4,7 550 =2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil têm		Rotational-speed 2b limitation intermediate speed		Fuel deliv	peed 50	Starting idle switchir	_	Torque- travel	Control 5 Control rod
rev/min	cm ³ /1000 strokes	kes rev/min 4a		rev/min cm³/1000 strokes		rev/min	cm ⁹ /1000 strokes	rev/min	UU.
1	2	3		4	5	6	7	8	9
950	181,0-183,0	990-1000	*	850 630 800	183,5-186,5 199,5-202,5 PLE 115,0-123,0	100	110,0-170,0	950 850 750 630 500	11,7 11,9+0,1 12,2+0,1 12,8+0,1 12,1+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2

3.83

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung £ by Robert Bosch GmbH. D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH. Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 10,8 b

1. Edition

PES 6 P 110 A 720/3 RS 357 RQV 300/600-1050 PA 382 KR Komb.-Nr. 0 402 036 034

 $PLE-Ma\beta = 0,740"-0,820"$

supersedes company:

MACK

Note VDT-I-MAC 002!

engine:

ENDT 675 DOM

Values only apply to test nozzle-and-holder assembly 0 681 343 009

1 680 750 015

and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,1+0,1	14,9-15,1	0,4			
300	5,0-5,2	0,8-1,8	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	i :		_	Intermediate	rated spe			Lower rated	speed i	۱	_	Sliding sleeve travel		
Degree of deflection of control	rev/min Control rod travel	Control rod travel	(1a)	Degree of deflection of control		Control rod travei		Degree of deflection of control		Control ro travel	•		(①
lever	mm 2	rev/min 3	(2a)		rev/min 5	mm (4)	lever	rev/min 8	mm 9	(3)	rev/min 10	mm 11	
max.	1050	16,2-17	,8	-	-	•		ca.18	250	9,8-11	,3	-		-
ca.63	11,1 4,0 1230	1090-11 1160-11 0 - 1	90				:	<u></u>	400	7,9-8, 3,8-5, -710=2,	2			

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test ou ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	very characteristics 5a speed 5b	Starting Idle switchin	_	Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	148,5-150,5	1090-1100 *	800	166,0-169,0	100	110,0-170,0 = ca.21,0	1000 800	
			600	182,5-185,5 PLE		mm RW	600 500	
			300	117,5-125,5				13,2
			<u> </u>					

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 i 1 1. Edition

Komb.-Nr. 0402 036 711

PES 6 P 110 A 720/3 RS 3036 RQV 300/450-950 PA 372 KR $PLE-Ma\beta = 0.740"-0.820"$

supersedes

Note VDT-I-MAC 002!

COMPANY

MACK **ETAY 673 A**

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	15,2+0,1	23,3 - 23,5	0,4			
300	5,0-5,2	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel	Control rod (a) travel mm rev/min (2a)	Intermediate Degree of daffection of control lever 4	rev/min	control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	Sliding s rev/min 10	mm 11
ca.69,5	970 1050 1100 1200	15,5-18,0 7,0-11,6 1,7- 7,8 0		-	-	ca.19,5	300 450			-

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten	stop 🔾	Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a	Starting Idle switchir	_	Torque- travel	Control rod	
		rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm¥1000 strokes	rev/min 8	travel mm	
900	233,0-235,0	990-1000 *	725 600 300	237,0-240,0 219,0-222,0 PLE 104,0-112,0	100	110,0-170,0 = ca.12,0 mm RW	900 725 600 500	15,2 15,4 14,6 14,0	

Checking values in brackets

* 1 mm less control rad travel then col 2

3.83

Geschäftsbereich KM Rundendienst Kfz-Ausrustung £ by Robert Bosch GmbH 0-7 Stuttgart 1, Postfach 50, Printed in the Federal Republic of Germany Imprimé en Republique Federale d'Allemagne par Robert Bosch GmbH

474

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 VDT-WPP 001/4 MAC 11,0 j 2 and Governors

US-PES 6 P 110 A 720/3 RS 6009 US-RQV 300/600-1050PA543K supersedes MACK PLE-MaB = 0.740"-0.820"Komb.-Nr. 9 400 231 061 company E 6 - 250 Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 250 PS 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,2-3,3 (2,15-2,25) mm (from 80C) Port cipsing at prestroke

Rotational speed revirus	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,9+0,1	16,8-17,0	0,4			
300	6,2-6,4	1,1-2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermedials	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection	Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rod travel mm	mm rev/min (2s	of control lever	rev/min	mm (4)	of control lever	rev/mm	mm 3	rev/min	mm .
1	2	3	4	5	6	7	8	9	10	11
max.	1125	15,2-17,8	-	-	-	ca.20,5	250	9,5-11,0	-	-
ca.61	11,9 4,0 1225	1090-1100 1170-1200 0 - 1,0				③	300 400 700-	7,9-8,1 3,9-5,3 760 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc	stop	lemetation	Fuel dein high idle s	ery characteristics (58) peed (50)	Starting idle switching	•	Torque- travel	control 5
Test oil temp. 40°C (104°F) (2) rev/min crh³/1000 strokes		rev/min		cm³/1000 strokes		cmil/1000 strokes	rev/min	travel mm
1000	169,0-171,0	1090-1000 *	750 650 300	169,5-172,5 155,5-158,5 PLE 101,0-109,0	100	110,0-170,0	1000 900 750 650	

Checking values in brackets

* 1 mm less control rod travel than cel. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 r 1

1. Edition

Er

US-PES 6 P 110 A 720/3 RS 6003 US-RQV 300/600-1050FA557 Supersedes - Company Note VDT-I-MAC 002! PLE-MaB = 0,740"-0,820" EME 6 - 237 Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
100 strokes 4	നന 2	cm ³ /100 strokes 3	mm 6
0,4			
0,4			
	0,4	0 34	cm³/ 100 strokes

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	ed		Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control	Control rod travel	(1)	Degree of deflection of control		Control re travel	od	Degree of deflection of control		Control rod travel		1
	rod travel mm	rev/min	23		rev/min	mm	\odot	lever	rev/min	mm 3	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
max.	1125	15,2-17	,8	-	-	-		ca.20,5	250	9,5-11,0	-	-
										l .		
ca.60,5	10,4	1090-11	00						300	7,9-8,1		:
	4,0	1170-12	00						400	3,8-5,2		
i	1230	0 - 1	.0			1			700-	760 =2.0		
								<u>3</u>				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 Imytation intermediate speed	high idle speed (5b)		Starting idle switchin	<u> </u>	Torque- travel	Control rod
rev/min	cfh³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ^B r1000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
1000	162,5-164,5	1090-1100*	800 600 300	173,0-176,0 192,0-195,0 PLE 125,5-133,5	100	110,0-170,0	1050 1000 800 700 600 500	11,4 11,8+0,1 12,4+0,1

Chucking values in brackets

* 1 mm less control rod travel than col 2

13

①

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAC 10,9 a 1. Edition

En

US-PES6P120A720RS6008-1 US-RQV300/500-975PA591-1K

supersedes compan Mack engine: EE 6 - 350 350 PS

PLE-Maß = 0,740" - 0,820"

See Service Information VDT-I-MAC 002!

Komb. - Nr. 9 400 231 147

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3, 2-3, 3 (3, 15-3, 35)

mm (from BDC)

		(3,13 3,33)				
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
975	14,4+0,1	26,7 - 26,9	0,4			
300	5,8-6,0	1,3 - 2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a	peed		Intermediate	rated sp	eed	Lower rated	speed		Slicting s	leeve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever	mm	rev/min 28	lever	rev/min	mm (4)	lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1080	15,2-17,8	-	-	-	ca. 20	250	9,8-11,3	-	-
ca. 59	13,2 4,0 1200	1015-1025 1140-1170 0 - 1,0					300 400 590-75	7,9-8,1 3,8-5,2 50 = 2,0	,	
						③				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) 2	Rotational speed (20) imitation stermediate speed	high ide speed (9)		idie switchir	ng point	Torque-control 5 travel Control rod travel	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	LEA/LINU	mm .
1	2	3	4	5	6	7	8	9
975	267,0-269,0	1015-1025 *	700 650	275, 0-278, 0 264, 5-267, 5	100	125,0-135,0		14,4 14,4+0,1 14,4+0,1
			800	PLE 145,5-153,5			650	14,5+0,1 14,1+0,1 13,0+0,1

Chucking values in brackets

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

* 1 mm less control rod travel than col. 2

3.83

BOSCH

Geschäftsbereich KM Kundendierist Kiz-Auerustung. C by Robert Bosch GmbH, D-7 Stuttgart 1 Postfach 30 Printed in the Federal Republic of Germany Imprime en Republique Federale d'Alemagne per Robert Bosch GmbH.

0

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAC 10,9 a 1 1. Edition

En

US-PES6P120A720RS6008-1

US-RQV300/500-975PA591-2K

supersedes -

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test company: Mack EE 6 - 350

350 PS

tubing 1 680 750 067.

PLE-Maß = 0,740" - 0.820"

See Service Information VDT-I-MAC 002!

Komb. - Nr. 9 400 231 165

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control red travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm 6
1	2	3	4	2	<u> </u>	
975	14,4+0,1	26,7 - 26,9	0,4			
300	5,4-5,6	1,2 - 2,2	0,4			
				† 		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Slidina s	ieeve travel
deflection		Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm	rev/min (28	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	നന
1	2	3	4	5	6	7	8	9	10	11
max.	1120	15,2-17,8	-	-	-	ca. 19	250	9,8-11,3	-	-
ca. 59	13,4	1015-1025					300	7,9-8,1		
•	4,0	1140-1170		ł			400	3,8-5,2		
	1200	0 - 1,0				3	690-	750 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2) limitation intermediate speed			Starting Idle switching	. •	Torque-control 5 travel Control rod	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
975	266,5-268,5	1015-1025 *	700	273,0-276,0	100	125,0-135,0	975 900	14,4 14,4+0,1
			650	265,0-268,0 PLE				14,4+0,1 14,5+0,1
			800	144,5-152,5			650	14, 1+0, 1 13, 4+0, 1

Checking values in brackets

* 1 mm less control rod travel than col. 2

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 p

1. Edition

1 680 750 015

supersedes PES 6 P 110 A 720/3 RS 3036 RQV 300/600-900 PA 453 K $PLE-Ma\beta = 0,740"-0,820"$ MACK company ETA 676 E Note VDT-I-MAC 002! engme. 306 PS Values only apply to test nozzle-and-holder assembly 0 681 343 009

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

and fuel-injection test tubing

2,40-2,50 mm (from BDC) Port closing at prestroke

		2,10 2,00				
Rotational speed rev/inin 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	14,4+0,1	22,2-22,4	0,4			
300	5,5-5,7	1,3-2,3				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed		Intermedia	te rated sp	eed	Lower rated	speed	1	Silding s	ieeve travel
Degree of deflection	rev/min Control	Control rod travel	deflection		Control rod travel	Degree of deflection		Control rod travel		
of control lever	rod travel mm	mm rev/min (2	of control lever	rev/min	mm 4	of control lever	rev/min	тт 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	970	16,2-17,	8 -	-	-	ca. 18,5	100	min.10 7,9-8,1	300	1,2-2,1
			 				400	3,8-5,2	600	4,5-5,0
ca,54	13,4	940-950 1100-1130					1	630 =2,0	960	8,3
	1200	0 - 1,0				<u>3</u>				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr				Starting Idle switchir		Torque- travel	control 5	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min cm³/1000 strokes r		rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 900	1,6 bar 222,0-224,0	940~950*	LDA 600 LDA 600	1,6 bar 240,5-243,5 0 bar 141,5-144,5 PLE 103,0-111,0	100	110,0-170,0	900 800 700 600 500	14,4 14,5+0,1 14,7+0,1 15,2+0,1 14,9+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2

Geschäftsbereich KH. Kundendienst Kfz-Ausrustung. C by Robert Bosch GmbH. D-7. Stuttgart 1. Postfach 50. Printed in the Federal Republic of Germ Imprime en Republique Federale d Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

MAC 11,0 p -2-

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
	Start	end	
3036 + 453K	0,40-0,41	1,08-1,10	· • · · · · · · · · · · · · · · · · · ·

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 k 5

En

PES 6 P 110 A 720/3 RS 3036 US-RQV 300/600-1050 PA 482 K
Komb.-Nr. 9 400 231 037 PLE-MaB = 0,740" - 0,820" Company
Note VDT-I-MAC 002!

MACK
engine
ETA 676 B

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(2,35-2,55)	mm (from BDC)	mm (from BDC)								
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)						
rev/min	mm 2	cm ³ /100 strokes	100 strokes	mm 2	cm ³ /100 strokes	mm 6						
1000	14,6+0,1	22,6-22,8	0,4									
300	5,3-5,5	0,8-1,8	0,4									

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated: Degree of deflection of control lever	deflection Control travel of control rod travel mm			Degree of deflection of control			Lower rated speed Degree of deflection of control lever rev/min 7 8 Control rod travel of 2 mm 3		Sliding s	mm
max.	1070	16,2-17,8	ca.49	13,7	940-950 1115-1145	ca.18,5	250	9,8-11,3 7,9-8,1	-	-
ca.63	13,6 4,0 1270	1090-1100 1205-1235 0 - 1,0				3 a)	400 680-7	3,8-5,2 740 =2,0		

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo	stop	Irmitation		Fuel delivery characteristics 58 high idle speed 5b		Idle		Torque-control 5 travel	
Test oil terr	op 40°C (104°F) (2)	rev/min	rev/min		cm ³ /1000 strokes		rev/min cm ² /1000 strokes		Control rod travel mm
1	2	3	- 4		5	6	7	8	9
1000	226,0-228,0	1090-1100 *		800 600 300	226,5-229,5 240,5-243,5 PLE 115,0-123,0	100	110,0-190,0	1000 800 700 600	14,6+0,1 14,6 14,7+0,1 14,8+0,1 15,3+0,1 15,0+0,1

Checking values in brackets

* 1 mm less control rod travel then col 2

Test Specifications Fuel Injection Pumps ① and Governors

40

VDT-WPP 001/4 MAC 10,8 a

1. Edition

PES 6 P 110 A 720/3 RS 357 RQV 275-1050 PA 381 KR

supersedes

company:

MACK END 673 E (180 HP)

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test-specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9,5-9,6	9,6-9,8	0,4			
275	5,0	0,8-1,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed	1	Intermediate	rated sp	eed	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod (1a travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		. ①
of control lever	rod travel	mm rev/min (28	of control lever	rev/min	mm (4)	ef control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.66	1050 1100 1150	15,0-17,8 9,8-14,0 4,0- 9,6		-	-	ca.10	150 250 400	7,2-8,0 4,5-6,4 2,4-3,6	250 400 900	0,7-1,8 3,1-3,7 6,0-6,4
	1260	0					680	0	1050	8,3
						<u>3a</u>				

Torque control travel a =

т

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intennediate speed			Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	95,5-97,5	1090-1100 *	700	109,0-113,0	100 275	140,0-170,0 14,0- 24,0		9,5+0,1 9,7+0,1 9,9+0,1 10,2+0,1 9,9+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2



Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 z

1. Edition

En

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		35-2-55)	mm (from BDC)			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
900	14,7+0,1	23,2-23,4	0,4			_
300	5,1-5,3	1,4-2,4	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	1	Intermediate	rated spo	eed	Lower rated	speed		Sliding s	leeve travel
	rev/min Control	Control rod ta	dellection		Control rod travel	Degree of deflection		Control rod travel	L .	1
	rod travel mm	mm rev/min (2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1020	15,2-17,8	•	8-9	-	ca.19	250	9,4-10,8	•	-
ca.63	13,7 4,0 1180	990-1000 1110-1140 0 - 1,0				3 a	300 400 535-	7,9-8,1 3,3-4,7 595 =2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel detiv	rery characteristics 5a	Starting Idle switchin		Torque- travei	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	tea/miu	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
900	232,0-234,0	990-1000*	725 650 800	247,0-250,0 226,5-229,5 PLE 108,0-116,0	100	110,0-170,0	950 900 800 725 650 500	14,7 14,9+0,1 14,9+0,1 14,3+0,1

Checking values in brackets

*1 mm less control rod travel than col. 2

BOSCH

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 k 3

1. Edition

<u>En</u>

PES 6 P 110 A 720/3 RS 3036 US-RQV 300/600-1050 PA 447 KR Komb.-Nr. 9 400 231 021 PLE-Maß = 0.740"-0.820" company MACK ENDT 676 VDT-I-MAC 002! values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2.75-2.95)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm 2	cm ³ /100 strokes	mm 6
1000	14,1+0,1	22,6-22,8	0,4			
1000	14,170,1	22,0-22,0	0,4			
300	5,0-5,2	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Upper rated speed Degree of rev/min Control rod				rated spe	eed Control rod	Lower rated	speed	Sliding sleeve travel		
	Control rod travel mm	travel	7	Degree of deflection of control lever	rev/min	travel 4	deflection of control tever	rev/min 8	Control rod travel mm 3	rev/min	mm 11
max.	1070	16,2-17,	8	-		-	ca.18	250 300	9,8-11,3 7,9-8,1	•	-
ca.63	13,1 4,0 1280	1090-110 1190-122 0 - 1,	20				(3e)	400 680-	3,8-5,2 740 =2,0		

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed 2b limitation intermediate 9200d			Starting idle switchin	_	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cmi91000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
1000	226,0-228,0	1090-1100 *	800	225,5-228,5	100	110,0-170,0	1050 1000 900	14,1
			600	240,0-243,0 PLE			800 600	14,4+0,1 15,0+0+1
			300	130,0-138,0			500	14,6+0,1

Chucking values in brackets

" 1 mm less control rod travel than col. 2

Fuel Injection Pumps 1

VDT-WPP 001/4 MAC 11,0 i 4

1. Edition

PES 6 P 110 A 720/3 RS 3036 US-RQV 300/450-950 PA 446 KR

Test Specifications

 $PLE-Ma\beta = 0.740" - 0.820"$

supersedes company:

Komb.-Nr. 9 400 231 019 Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009

MACK

and fuel-injection test tubing

and Governors

1 680 750 015

ETAY 673 A 315 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2,4-2,5 (2,45-2,55)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rav/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm³/100 strokes	mm 6
900	15,1+0,1	23,3 - 23,5	0,4			
300	5,0-5,2	1,4 - 2,4	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection of control	rev/min Control rod travel	Control rod (a) travel mm rev/min (28)	Intermediate Degree of deflection of control lever	rev/min	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	eeve travel 1 mm 11
max.	970	16,2-17,8	-	-	-	ca.18,5	250 300	9,8-11,3 7,9- 8,1	-	-
ca. 63	14,1 4,0 1210	990-1000 1120-1150 0 - 1,0				39		3,8- 5,2 - 635 = 2,0		

Torque controi travel a =

estoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		2 Imitation intermediate speed				switchin	g point	Torque-control 5 travel Control rot travel	
rev/min	cm³/1000 strokes	rev/min	(40)	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	
1	2	3		4	5	6	7	8	9
900	233,0-235,0	990-1000	*	725	239,5-242,5	100	110,0-170,0	950 900	15,0+0,1 15,1
				600	217,5-220,5			800	_
				300	PLE 106,0-114,0				max.14,5 13,7+0,1

Geschäftsbereich KH. Kundendienst Kfz-Ausrustung. ε by Robert Bosch GmbH. D-7 Stuttgart 1 Positisch 50. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne per Robert Bosch GmbH.

Checking values in brackets

* 1 mm less control rad travel then cot. 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 u 1 1. Edition

PES 6 P 110 A 720/3 RS 6002 US-RQV 300/400-900 PA 575 K $PLE-Ma\beta = 0.740" - 0.820"$

supersedes

MACK

company: engine.

E 6 - 315 R 315 PS

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Komb.-Nr. 9 400 231 079

A. Fuel Injection Pump Settings
2,4-2,5
Part clasing at Prestroke
(2,35-2,55) mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
900	14,7+0,1	23,2-23,4	0,4			
300	5,1-5,3	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediat	e rated sp	eed	Lower rated	speed		Sliding sleeve travel		
Degree of deflection	rev/min Control	Control rod (Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0	
	rod travel	mm rev/min	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm	
1	2	3	4	5	6	7	8	9	10	11	
max.	1020	15,2-17,	3 -	-	-	ca.19	250	9,4-10,8	-	-	
ca. 61	13,7 4,0 1130	940-950 1070-110 0 - 1,	- 1			39		7,9-8,1 3,3-4,7 590 =2,0			

Torque control travel a =

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed 2b limitation intermediate speed	Fuel deliv		Starting Idle switchir	•	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
900	232,0-234,0	940-950 *	725	244,0-247,0	100	110,0-170,0	800	14,6 14,9 + 0,1
			650	226,5-229,5 PLE			725 650	14,9+0,1 14,3+0,1
			300	87,5-95,5			500	13,2+0,1
								L

Checking values in brackets

* 1 mm less control rod travel than col. 2

VDT-WPP 001/4 MAC 11.0 o 1 1. Edition

PES 6 P 110 A 720/3 RS 3064 US-RQV 300/600-1050 PA 532 K Komb.-Nr. 9 400 231 055

 $PLE-Ma\beta = 0.740" - 0.820"$

supersedes company:

engine

MACK ETZ 675 (235 PS)

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC) (3.45 - 3.65)

Rotational speed revirnin 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,7+0,1	17,2-17,4	0,4			
300	5,5-5,7	1,1-2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection of control	rev/min Control rod travel	Control rod travel mm rev/min	(a) (2a)	Degree deflect of con- lever	e of tion trol	rated spe rev/min 5	Control travel mm	rod	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control re travel mm	3	Stiding s rev/min 10	mm	
max.	1120	15,2-17,	,8		-	•		-	ca.20	250 300	9,8-1 7,9-8		-	-	
ca.62,5		1090-110 1185-121 0-1,0	15							400	3,8-5 750= 2	,2			
					<u></u>				30	<u> </u>					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test qui tem		imitation intermediate speed	Fuel delivingh idle s	ery characteristics (5a)	Starting Idle switchir	g point	Torque- travel	Control od
rev/min	cm ³ /1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cmi#1000 strokes	rev/min	mm .
1	2	3	4	5	6	7	8	9
1000	172,0-174,0	1090-1100*	800	178,5-181,5	100	110,0-170,0	1050 1000	
			600	197,5-200,5 PLE			800 700	
			300	113,0-121,0			600 500	

Geschäftsbereich KM. Kundendienst. Kfz-Ausrüstung. 5. by Robert Bosch GmbH. D-7. Stuttgart 1. Postfach 50. Printed in the Federal Republic of Germany Impnime en République Fédérale d'Altemagne par Robert Bosch GmbM.

Checking values in brackets

1 mm less control rod travel then col 2

Testoil-ISO 4113

VDT-WPP 001/4 MAC 11,0 t 1 1. Edition

supersedes company

MACK E 6 - 200 (200 PS)

US-PES 6 P 110 A 720 RS 6004-1 US-RQV 300/600-1050 PA544-2K Komb.-Nr. 9 400 231 145

engine Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3.15-3.35)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /1 00 strokes 3	mm 6
1000	10,0+0,1	12,6 - 12,8	0,4			
300	5,0-5,2	1,1 - 2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection	rev/min Control rod travel	Control rod ta travel mm rev/min (28)	Intermediate Degree of deflection of control lever		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1125	15,2-17,8	-	-	-	ca.21	250	8,0-10,0		-
ca.60	9,0 4,0 1215	1090-1100 1155-1185 0 - 1,0				3	300 400 700-7	7,9-8,1 3,8-5,2 60 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Control-roo	Full-load delivery Control-rod stop (104°F) 2 Rotational-speed limitation intermediate speed			ery characteristics 5a	Starting Idle switchin		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	9
1000	126,0-128,0	1090-1100 *	750 650	121,0-124,0 120,5-123,5	100	110,0-170,0	1000 900	9,9+0,1 9,8+0,1 9,6+0,1

Checking values in brackets

* 1 mm less control rad travel than col. 2

3.83

VDT-WPP 001/4 MAC 11,0 m

1. Edition

PES 6 P 110 A 720/3 RS 3045 Komb.-Nr. 0 402 036 723 RQV 300/600-1050 PA 405 KR PLE-Ma β = 0,740" - 0,820"

supersedes

engine:

company.

MACK ETY 675 DOM

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	3,2-3,3 (3.15-3.35)	mm (from BDC)			
Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,6+0,1	15,4-15,6	0,4			
300	5,5-5,7	1,0 - 2,0	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	W		Intermediate	rated spe	ed		Lower rated	speed		1	ileeve travel
000.00	rev/min Control	Control rod travel	(1a)	Degree of deflection		Control ro- travel	d	Degree of deflection		Control rod travel		, ①]
of control	rod travel	mm rev/min	(28)	of control	rev/min	mm	(4)	of control lever	rav/min	mm (3 rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
max.	1050	16,2-17,	,8	-	-	-		ca.18,5	250	9,8-11,	3 300	0,9-2,0
ca. 63		1090-110 1170-120								7,9-8,1 3,8-5,2	1	3,1-3,6
1	4,0	1170-120	00						100	0,0 0,2	810	4,7-5,4
	1250	0 - 1	,0					(3a)	550-	710=2,0	1050	7,8

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) timitation intermediate speed				fuel delivery 6	Torque-	Control Control root
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	153,5-155,5	1090-1100 *	800	168,0-171,0	100	110,0-170,0	1000 300	
			600	191,0-194,0 PLE			700 600	13,7 14,3+0,
			300	105,0-113,0			500	14,2+0,

Checking values in brackets

* 1 mm less control rod travel than cel. 2

①

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 h 2

1. Edition

PES 6 P 110 A 720/3 RS 356 Komb.-Nr. 0 402 036 040 RQV 300/600-1050 PA 420 KR

supersedes

company.

engine

MACK ET 673 E DOM

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8-2,9

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,8+0,1	12,3 - 12,5	0,4			
300	6,0-6,2	0,7 - 1,7	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed		Lower rated	speed		Slidena	deen ternet
deflection	rev/min Control rod travel	UMVD:	e	Degree of deflection of control		Control re travel	od	Degree of deflection of control		Control rod travel	Sindings	sleeve travel
lever	mm	rev/min (28)		Lea/Wilu	mm	•	lever	rev/min	mm (3	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
max.	1050	16,2-17	,8	-	~	-		ca.18,5	250	9,8-11,	3 300	0,9-2,0
ca.61,5		1090-1100 1160-1190 0 - 1,0)					39	300 400 670-7	7,9-8,0 3,6-5,0 730 = 2,0	570	3,1-3,6 4,7-5,4 7,8

Torque control travel a =

mr

C. Settings for Fuel Injection Pump with Fitted Governor

Control-roo	Control-rod stop		Rotational-speed (2b) Fuel delivery characterist high idle speed (5b)			fuel delivery 6	Torque- travel	control 5	
rev/min 1	cm³/1000 strokes	rev/min 49	rev/min cm³/1000 strokes r		rev/min	cm [®] /1000 strokes	rev/min	travei mm	
1000	100 0 105 0	1000 1100 +	7750	400 5 404 5	0	/	R	9	
1000	123,0-125,0	1090-1100 *	750	128,5-131,5	100	110,0-170,0	1000		
			660	109,5-112,5			750 700 600 500	10,3+0,1	

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschäftsbereich KM. Kundendienst. Kfz-Ausrustung. t by Robert Bosch GmbH. D-7. Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany Imprime en République Féderale d'Allemagne par Robert Bosch GmbH.

VDT-WPP 001/4 MAC 11,0 m 1

1. Edition

PES 6 P 110 A 720/3 RS 3045 Komb.-Nr. 9 400 231 015

RQV 300/600-1050 PA 433 KR

supersedes

company: engine:

MACK **ETY 673 E** 200 PS

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,2-3,3Port closing at prestroke mm (from BDC) (3.15 - 3.35)

	Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1	1000	12,0+0,1	13,0 - 13,2	0,4			
ı	300	5,5-5,7	1,0 - 2,0	0,4			

B. Governor Settings

J 4113	1000 300	-	,0+0,1 5-5,7		- 13,2 I - 2,0		0,4							
Testoil-ISO	Adjust the fue B. Gov Upper rated: Degree of	ernor		ngs	Intermediate		eed] 	Lower rated	speed			Sliding s	leeve travel
Te	deflection of control lever	Control rod travel mm	travel	28	deflection of control lever	rev/min 5	Control ro travel mm 6	4	Degree of deflection of control lever	rev/min	Control ro travel mm	d 3	rev/min 10	1
	max. ca.62	1050 11,0 4,0 1250	16,2-1 1090-1 1160-1 0 -	100	-	-	-		ca.18,5	300 400	9,8-11 7,9-8, 3,8-5, 730=2,	1 2	-	-
									3 a					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

elivery d stop np. 40°C (104°F) 2	Rotational-speed 2b imitation intermediate speed	Fuel delic	very characteristics 5a	idie		Torque- travel	control 5	
cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm	
		-	3	ь	/	8	9	
130,0-132,0	1090-1100 *	750	133,5-136,5	100	110,0-170,0			
		600	123,5-126,5			800	12,0+0,1 12,2+0,1	
						750	12,2+0,1	
						600	11,2+0,1	
							11,2+0,1	
	d stop np. 40°C (104°F) 2 cm³/1000 strokes 2	np. 40°C (104°F) 2 imitation intermediate speed rev/min 2	ch ch ch ch ch ch ch ch	cm ³ /1000 strokes cm ³ /1	Imp. 40°C (104°F)	cm ³ /1000 strokes rev/min 40 rev/min cm ³ /1000 strokes rev/min 3 130,0-132,0 1090-1100 * 750 133,5-136,5 100 110,0-170,0	cm ³ /1000 strokes rev/min (mistron intermediate speed rev/min (mistron inte	

Checking values in brackets

* 1 mm less control rad travel then cal. 2

617

VDT-WPP 001/4 MAC 10,8 a 1 1. Edition

MACK

END 711

company:

PES 6 P 110 A 720/3 RS 357 ROV 275-1050 PA 380 KR supersedes Komb.-Nr. 0 402 036 032

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009

and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(2.75-2.95)	mm (from BDC	mm (from BDC)							
Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm					
1000	10,6+0,1	12,1-12,3	0,4								
275	5,0-5,2	0,8-1,8	0,4								

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	rev/min Control rod travel	mm -	Degree of deflection of control	Degree of deflection of control			Lower rated speed Degree of deflection of control lever rev/min mm (3)			leeve travel
lever 1	mm 2	rev/min (3	4	5	6	7	8	9	rev/min 10	11
max.	1050 1100 1150 1180 1260	15,0-17, 9,8-14, 4,0-9,6 0 -7,0	0	-	-	ca.10	150 200 300 400 600 680	7,2-8,0 6,0-8,0 3,2-4,4 2,4-3,6 0 -1,2 0	250 520 780 1050	0,7-1,8 2,6-3,2 4,6-5,1 8,2

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten rev/min		Rotational-speed 2b limitation intermediate speed rev/min 4a	Fuel deliv high idle s rev/min	pery characteristics 5a peed 5b cm³/1000 strokes	Starting Idle switchin	\circ	Torque- travel	Control od travel mm
1	2	3	4	5	6	7	8	9
1000	119,5-121,5	1090-1100*	700	129,5-132,5	100	146,0-166,0 = ca.21,0 mm RW	1000 900 700 500	10,6 10,6 10,4 10,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 h

1. Edition

PES 6 P 110 A 720/3 RS 356 Komb.-Nr. 0 402 036 026 RQV 300/600-1050 PA 368 KR

supersedes

company engine. MACK

ET 673 EXP.

Values only apply to test nozzle-and-holder assembly 0 681 343 009

1 680 750 015

and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke	(2 75-2 95)	mm (from BDC)			
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm .	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
2	3	4	2	3	6
12,5+0,1	17,8-18,0	0,4			
6,0-6,2	0,7 - 1,7	0,6			
	Control rod travel mm 2 12,5+0,1	Control rod travel Control rod travel Fuel delivery	Control rod travel Control rod travel Fuel delivery Difference Cm³/100 strokes 12,5+0,1 17,8-18,0 0,4	Control rod travel	Control rod travel

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	i l							Lower rated speed Degree of Control rod				Sliding s	leeve travel
deflection	rev/min Control rod travel		(e)	Degree of deflection of control		travel		deflection of control		travel			\cup
lever 1	mm 2	rev/min ((2a)	lever 4	rev/min 5	mm (٥	18ver 7	rev/min 8	mm 9	(3)	rev/min 10	mm 11
max.	1050	16,2-17,	8	-	-	-		ca.18,5	250	9,8-11	,3	300	0,9-2,0
ca.63		1090-110 1175-120 0 - 1,	5						300 400 650-	7,9-8, 3,8-5, 710 =2,	.2	570 810	3,1-3,6 4,7-5,4
								3a				1050	7,8

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	1 stop np. 40°C (104°F) 2	Rotational-speed 2b Fuel delivery characteristics(die	ng point	travel	Control rod travel
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	_	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	177,5-179,5	1090-1100 *	750	170,5-173,5	100	110,0-170,0 = ca. 21,0	1050 600	-
			600	153,0-156,0		mm RW	500 750	11,2+0,1 12,6+0,1

Checking values in brackets

*1 mm less control rod travel then col. 2

BOSCH

3.83

1313

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 i 5

1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 9 400 231 023

RQV 300/450-950 PA 448 KR PLE-Ma $\beta = 0.740$ " - 0.820" supersedes

company engine

MACK **ETAZ 673 A** 315 PS

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,4-2,5

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	15,1+0,1	23,4-23,6	0,4			
300	5,0-5,2	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediat	e rated sp	eed	Lower rated	speed		Stiding sleeve travel	
deflection	rev/min Control	Control rod (18	> genection		Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rod travel	mm rev/min (2)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	970	16,2-17,8		-	-	ca. 18,5	300 250	7,9-8,1 9,8-11,3	-	-
ca.63	14,1 4,0 1200	990-1000 1115-1145 0 - 1,0					400	3,8-5,2 635= 2,0		
						<u>3a</u>				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 5a peed 5b	Starting Idle switchin	_	Torque-control 5 travel Control ro	
rev/min		rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm [®] /1000 strokes	rev/min 8	travel mm 9
900	234,0-236,0	990-1000 *	725 600 300	241,5-244,5 219,5-222,5 PLE 108,0-116,0	100	110,0-170,0	950 900 800 725 600 500	15,0 15.1 15,1 15,2 max.14,5 13,9

Geachaftsbereich KH. Kundendienst. Kfz-Auerustung. E. by Robert Bosch GmbH, D-7 Stuttgart 1. Postfach 50. Printed in the Federat Republic of Germany Imprime en République Fédérate d'Allemagne par Robert Bosch GmbH.

Checking values in brackets

* 1 mm less control rad travel than cci. 2

VDT-WPP 001/4 MAC 11,0 k 1 1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 0 402 036 709

ROV 300/600-1050 PA 364 KR $PLE-Ma\beta = 0.740" - 0.820"$

supersedes company:

MACK

ETA 676

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (frcm BDC)

Lour Crossing at bins	HUNG	2 75-2 95)								
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokea 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6				
1000	13,8+0,1	21,0-21,2	0,4							
300	5,0-5,2	1,2 - 2,2	0,4							

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection	rev/min Control rod travel	Control rod travel mm rev/min 2a	of control	rev/min	Control rod travel	Lower rated Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
max. ca.63	1070 12,8 4,0 1280	16,2-17,8 1090-1100 1190-1220 0 - 1,0	4	5	6	ca.19	250 300 400 800	9,8-11,5 7,2-9,0 2,2-5,0 0 -0,8	400	0,4-1,0 1,0-1,6 2,5-3,1 8,5
						39				

Torque control travel a =

Festoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 2b limitation intermediate speed			Starting idle switchin	<u> </u>	Torque- travel	Control cod
rev/min	cfh³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	210,5-212,5	1090-1100 *	800 600	210,5-213,5 228,0-231,0 PLE	300 1155	11,5 mm RW 17,0-23,0 55,0-61,0 111,0-119,0		

Checking values in brackets

1 mm less control rod travel than col. 2

VDT-WPP 001/4 MAC 10.8 b 1

PES 6 P 110 A 720/3 RS 357 Komb.-Nr. 9 400 231 017

ROV 300/600-1050 PA 441 KR

supersedes

1. Edition

company

MACK

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

ENDT 675 DOM

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(2.75-2.95)	mm (from BDC)								
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6					
1000	12,1+0,1	14,8 - 15,0	0,4								
300	5,0-5,2	0,7 - 1,7	0,4								

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min (28)	Intermediate Degree of deffection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	1050	16,2-17,8	-	-	-	ca.18		9,8-11,3 7,9 - 8,1	380-	0,9-2,0 3,1-3,6
ca.63	11,1 4,0 1230	1090-1100 1160-1190 0 - 1,0				3 a		3,8-5,2 710 =2,0	810 1050	4,7-5,4 7,8

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed (2b) limitation intermediate speed			Starting Idle switchir	_	Torque- travei	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	rev/min cm³/1000 strokes rev/min		cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	147,5-149,5	1090-1100*	800	165,5-168,5	100	110,0-170,0	1000 800	12,1 12,5+0,1
			600	181,5-184,5	[600	13,4+0,1 max.13,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.83

B22

1. Edition

PES 6 P 110 A 720/3 RS 3045 Komb.-Nr. 9 400 231 031

US-ROV 300/600-1050 PA 457 KR supersedes

company MACK

ETZ 673 E 200 PS

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3.15-3.35)	mm (from BDC)			
Rotational speed rov/min	Control rod travel mm 2	Fuel delivery Cm³/100 strokes Cm³/ 100 strokes 4		Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,8+0,1	13,2-13,4	0,4			
300	5,9-6,1	1,1 - 2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated Degree of deflection of control	rev/min Control rod travel		Intermediate Degree of deflection of control		Control rod travei	Lower rated Degree of deflection of control lever	speed rev/min	Control rod travel	Sliding s	leeve travel
lever 1	mm 2	rev/min (28)	lever 4	rev/min 5	mm (4)	7	8	9	10	11
max.	1050	16,2-17,8	-	-	-	ca.18,5	250	9,8-11,3	-	-
ca.62	10,8 4,0 1225	1090-1100* 1160-1190 0 - 1,0						7,9-8,1 3,8-5,2 730 =2,0		
						3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b imitation intermediate speed	Fuel delivery characteristics 5a high idle speed 60		Starting Idle switchir	•	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1000	131,5-133,5	1090-1100 *	750 600	128,5-131,5 122,0-125,0	100	110,0-170,0	1050 1000 900 750 600	11,8+0,1 11,8 11,8+0,1 11,9+0,1

Checking values in brackets

* 1 mm less control rad travel then oni. 2

3.83

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 t

1. Edition

US-PES 6 P 110 A 720/3 RS 6004 US-RQV 300/600-1050 PA 544K supersedes Komb-Nr. 9 400 231 063

MACK

company.

engine

E 6 - 200

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

200 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokas 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,0+0,1	12,6 - 12,8	0,4			
300	5,0-5,2	0,8 - 1,8	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated spe		Lower rated	speed	1	Stiding steeve travel	
	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control	rod travel mm	mm rev/min (28)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm.
1	2	3	4	5	6	7	8	9	10	11
max.	1120	15,2-17,8	-	-	-	ca.21		8,0-10,0 7,9- 8,1	-	-
ca.60	9,0 4,0 1215	1090-1100 1160-1190 0 - 1,0					400	3,8-5,2 760 =2,0		
						(3a)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr		Rotational-speed 2b limitation intermediate speed	high idle speed (S)		Starting Idle switchir	\circ	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cmi#1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	126,0-128,0	1090-1100 *	750	122,0-125,0	100	110,0-170,0	1050 1000	9,9+0,1 10,0
			650	121,0-124,0			900 750	9,9+0,1 9,8+0,1
								9,6+0,1 9,1+0,1

Checking values in brackets

mm less control rod travel then col. 2

02

①

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 MAC 11,0 o

1. Edition

Er

PES 6 P 110 A 720/3 RS 3064 RQV 300/600-1050 PA 461 K
Komb.-Nr. 0 402 036 725 PLE-Maß = 0,740" - 0,820"

Note VDT-I-MAC 002!
Values only apply to test nozzle-and-holder assembly 0 681 343 009
and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3,45-3,65)	mm (from BOC)								
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)					
rev/min 1	mm 2	cm ³ /100 strokes	100 strokes 4	mm 2	cm ³ /100 strokes 3	171M 6					
1000	12,7+0,1	17,2 - 17,4	0,4								

0,4

Adjust the fuel delivery from each outlet according to the values in

5,5-5,7 | 1,1 - 2,1

B. Governor Settings

300

Festoil-ISO 4113

Upper rated s	peed		intermediat	e rated sp	eed	Lower rated	Intermediate rated speed Lower rated speed					
deflection of control	rev/min Control rod travel mm	travel on	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	leeve travel		
1	2	3	4	5	6	7	8	9	10	11		
max.	1050	16,2-17,8	-	-	-	ca. 18,5	250	9,8-11,3	•	-		
ca. 63		1090-1100 1175-1205 0 - 1,0	;			3	400	7,9-8,1 3,8-5,2 730 =2,0				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed (2b) imitation intermediate speed	Fuel deln high idle s	very characteristics Sa posed Sb	Starting Idle switchin		Torque- travel	Control Control
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm 1000 strokes	rev/men	
1	2	3	•	3	6	/	8	9
1000	172,0-174,0	1090-1100 *	800	178,5-181,5	100	110,0-170,0	1050 1000	12,7+0,1 12,7
			500	197,5~200,5			900	12,8+0,1
			300	PLE 1/3,0-121,0				13,4+0,1 13,9+0,1
							500	13,5+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 v 2 1. Edition

US-PES 6 P 110 A 720 RS 6006 Kemb.-Nr. 9 400 231 167

US-ROV 300/600-950 PA621-5K $PLE-Ma\beta = 0.740" - 0.820"$

supersedes

MACK

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015 EME 6 - 300 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,2-3,3 (3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
950	14,0+0,1	20,9-21,1	0,4			\
300	5,8-6,0	2,0 - 3,0	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	eed			Lower rated	speed	1		Sliding s	leeve travel
		Control rod (travel	10	Degree of deflection		Contro		- [4	Degree of deflection		Control ro travel	od		· ①
of control lever	rod travel mm	mm rev/min (2a)	of control lever	rev/min	mm	(4		of control lever	rev/min	mm .	3	rev/mเก	mm
1	2	3		4	5	6		1	7	8	9		10	11
max.	1020	15,2-17,	8	-	-		-		ca.20	250	9,8-1	1,3	-	-
ca. 62	13,0 4,0 1155	990-100 1100-113 0 - 1,	30							300 400 590-	7,9-8 3,3-4 550 =2	,7		
									<u>3e</u>					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b ilmitation intermediate speed	Fuel deln high idle s	rery characteristics 58 page 50	Starting Idle switchir	•	Torque-control 5 travel Control roo		
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
950	209,0-211,0	990 - 1000*	850	210,0-213,0	100	120,0-180,0		14,0 14,1+0,1	
			630	236,5-239,5 PLE			750 630	14,6+0,1 15,2+0,1	
			800	117,0-125,0				14,7+0,1	

Chacking values in brackets

* 1 mm less control rad travel then cal. 2

3.83

300 PS

VDT-WPP 001/4 MAC 11,0 i 6

1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 9 400 231 047

US-RQV 300/450-950 PA 513 K $PLE-Ma\beta = 0,740" - 0,820"$

supersedes company

MACK

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

ETAZ 673 A 315 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed Contrave rev/min mm 1 2	el .		cm³/	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
900 15,	1+0,1 2	3,1-23,3	0,4			
300 5,0	0-5,2	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	eed	Lower rated	speed		Sliding s	leeve travei
	rev/min Control rod trave	Control rod	(b)	Degree of deflection of control		Control rod travei	Degree of deflection of control		Control rod travel		0
lever	mm	rev/min	(2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
max.	970	16,2-17,	,8	-	-	-	ca.20,5	250	10,1-10,5	1	-
ca.62,5	14,1 4,0 1210	990-1000 125-1155 0 - 1,0	5					400	7,9-8,1 4,9-5,3 -665=2,0		
							3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2t limitation intermediate speed	Fuel delin	very characteristics 5a	Starting idle switchin	_	Torque-control 5 travel Control ro		
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min 8	travel mm 9	
LDA 900	0,7 bar 231,0-233,0	990-1000 *	LDA 725 LDA 600	0,7 bar 240,5-243,5 0,7 bar 219,0-222,0 PLE 103,0-111,0	100	110,0-170,0	900 725 700 600	15,0+0,1 15,1 15,2+0,1 15,1+0,1 max,14,5 13,6+0,1	

Checking values in brackets

* 1 mm less control rad travel then cal. 2

3.83

Test at n =

900

rev/min decreasing pressure - in bar gauge pressure

MAC 11,0 i 6 -2-

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES6PRS3036	0,36		13,8 - 13,9
+US-RQVPA 513 K		0,53	14,8 - 15,0
٠			

Notes:

(1) when n =

rev/min and gauge pressure =

①

Test Specifications Fuel Injection Pumps ① and Governors

40

VDT-WPP 001/4 MAC 10,8 c

1. Edition

PES 6 P 110 A 720/3 RS RQV 300/600-1050 PA 399 KR Komb.-Nr. 0 402 036 038 PLE-Maß = 0,740"-0,820" Note VDT-I-MAC 002!

supersedes company

MACK

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

ENDT 675 EXP

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	12,1+0,1	15,0 - 15,2	0,4			
300	5,0-5,2	0,8 - 1,8	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rev/min	Control rod (travel	(a)	Intermediate Degree of deflection	rated sp	Control roo	d	Lower rated Degree of deflection	speed	Control rod	Sliding s	leeve travel
of control	rod travel	mm	29	of control	rev/min 5	mm 6	4	of control lever 7	rev/min 8	mm 3	rev/min 10	mm 11
max.	1050	16,2-17,	8	•	•	-		ca.18,5	250 300	9,8-11,3 7,9-8,1	300 380-	0,9-2,0
ca.63	11,1 4,0 1230	1090-110 1160-119 0 - 1,	90						400 650-	3,8-5,2 710 =2,0	570 810 1050	3,1-3,6 4,7-5,4 7,8
								(3a)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro	d stop	Times about (EM)			ldle	_	Torque-control 5		
rev/min	np. 40°C (104°F) (2) cm³/1000 strokes -	rev/min 4a		cm ³ /1000 strokes	switchir rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
.1	2	3	4	5	6	7	8	9	
LDA 1000	0,7 bar 150,0-152,0	1090-1100*	LDA 600 LDA	0,7 bar 184,0-187,0 0 bar	100	110,0-170,0	1050 1000 900	12,1	
LDA 800	0,7 bar 167,5-170,5		1000	134,5-137,5 PLE			800 700	12,6+0,1	
			300	115,0-123,0			500	max.13,2	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

500 Pump/governor	Setting	Measurement	Control ro	MAC 10,8 c diminution difference
	Gauge pressure =	bar Gauge pressure =	bar mm	(1)
PES 6 PRS 357	0,36		11,5	- 11,6
+ RQVPA 399 KR		0,49	11,9	- 12,1

Notes:

(1) when n =

rey/min and gauge pressure =

VDT-WPP 001/4 MAC 11,0 1 1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 0 402 036 721

RQV 300/600-1050 PA 398 KR

supersedes

Note VDT-I-MAC 002!

 $PLE-Ma\beta = 0.740" - 0.820"$

company: MACK

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

ETA 676 EXP

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Port closing at prestroke

onal speed Control rod Fuel delivery travel cm³/100 strokes 2 3		cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
3,9+0,1	21,1-21,3	0,4			
,0-5,2	1,2-2,2	0,4			
		3 ,9+0,1 21,1-21,3 0-5,2 1,2-2,2			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	i 1						speed I	Control rod	Sliding sleeve trave	
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min 28	deflection	rev/min 5	travel	Degree of deflection of control lever	rev/min 8	travel mm 3	rev/min	mm 11
max.	1070	16,2-17,8	-	-	-	ca.18,5	250	9,8-11,3	300	0,6-1,8
ca. 63	12,9	1090-1100	_				300	7,9-8,1	390- 580	3,1-3,6
	4,0 1280	1190-1220 0 - 1,0				39		3,8-5,2 -740=2,0	820 1050	4,9-5,4 7,9

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr		Rotational-speed 20 limitation intermediate speed	Fuel delivingh idle s	rery characteristics 5a	Starting idle switchir	•	Torque-control (travel	
rev/min	cfh³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min B	cmi#rt000 strokes	rev/min 8	mm 9
LDA 1000 LDA 800	0,7 bar 210,5-212,5 0,7 bar 210,5-213,5	1090-1100*	LDA 600 LDA 1000	0,7 bar 228,0-231,0 0 bar 187,0-190,0 PLE	100	110,0-170,0 = ca.11,5 mm RW	1000 900 800	13,8+0,1 13,8 13,8+0,1 14,1+0,1 14,8+0,1
			300	128,5-136,5				14,4+0,1

Checking values in brackets

* 1 mm less control rad travel then col. 2

Geschäftsbereich KH. Kundendrenst. Kfz-Ausrustung c. by Robert Bosch GmbH. D-7 Stuttgert 1 Postfach 50. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne per Robert Bosch GmbH.

Test at n =

300

rev/min decreasing pressure - in bar gauge pressure

MAC 11.0 1 -2-

		MIAC 11,0
Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = bar	Gauge pressure = bar	mm (1) .
0,36		13,1 - 13,2
		13,5 - 13,7
	0,49	
	Gauge pressure = bar	Gauge pressure = bar Gauge pressure = bar 0,36

Notes:

(1) when n =

rev/min and gauge pressure =

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 q

1. Edition

PES 6 P 110 A 720/3 RS 6002 Komb.-Nr. 9 400 231 041

US-RQV 300/600-1050 PA 485 K $PLE-Ma\beta = 0.740" - 0.820"$

supersedes company

MACK

Note VDT-I-MAC 002!

engine Values only apply to test nozzle-and-holder assembly 0 681 343 009 EM 6-285 285 PS

and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travei mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,9+0,1	21,3 - 21,5	0,4			
300	5,4-5,6	1,8 - 2,8	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection of control	rev/min Control rod travel mm	Control rod travel mm rev/min	(1) (2a)	Intermediate Degree of deflection of control lever	rated spo rev/min 5	Control travel mm	rod	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3		mm
max.	1120	15,2-17	,8	-	-	_	•	ca.20	250 300	9,8-11,3 7,9-8,1	-	-
ca. 62	11,9 4,0 1240		15					3	400	3,8-5,2 750 =2,0		

Torque control travel a *

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten	stop	Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics (58)	Starting idle switchir	_	Torque- travel	Control rod
rev/min	crh³/1000 strokes	rev/min 4e	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min 8	travel mm
1000	212,5-214,5	1090-1100 *	800 600 800	216,0-219,0 243,5-246,5 PLE 147,0-155,0	-	110,0-170,0		12,8+0,1 12,9 13,3+0,1 14,0+0,1 14,3+0,1 14,3+0,1

Checking values in brackets

* 1 mm less control rod travel then col. 2

VDT-WPP 001/4 MAC 11,0 k 4

1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 9 400 231 033

US-ROV 300/600-1050 PA 462 K $PLE-Ma\beta = 0.740" - 0.820"$

supersedes company:

MACK

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

ETA 676 B 306 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,4-2,5 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	14,6+0,1	22,5-22,7	0,4			
300	5,3-5,5	1,3-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in ____

B. Governor Settings

Upper Degree deflect of con- lever	tion Co	v/min ontroi d travel	Control rod travel mm rev/min 3	(e)	Intermediate Degree of deffection of control lever	rated spe rev/min 5	Control r travel mm	rod	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max.	. 1	070	16,2-17	,8	-	•	-		ca. 18,5	250	9,8-11,3	-	-
ca.6		3,6 4,0 270	1090-11 1190-12 0 - 1							300 400 680-	7,9-8,1 3,8-5,2 740 =2,0		
									<u>3a</u>				

Torque control travel a =

Festoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel delivery characteristics 5a S high idle speed 5b s			fuel delivery 6	Torque- travel	Control fod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cmil/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	226,0-228,0	1090-1100*	800	227,0-230,0	100	110,0-170,0	1050 1000	
			600	240,5-243,5			800 700	14,7+0,1
			300	PLE 116,0-124,0			600 500	15,3+0,1
			300	110,0-124,0			300	13,010,1

Checking values in brackets

* 1 mm less control rad travel then col. 2

Testoil-ISO 4113

40

WPP 001/4 MB 14,6 g 1

4. Edition

PE 8 P 120 A 320 LS 3807

RO 30071150 PA 511-2

supersede Daimler-Benz

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \stackrel{+}{=} 0,5^{\circ} (\stackrel{+}{=} 0,75^{\circ})$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

(3,95-4,15)

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

company: 0M 422 LA engine: 276 kW (375 PS)

A. Fuel Injection Rump Settings

Port closing at prestroke

mm (from BDC)

Zy1.8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	11,6+0,	1 18,9 - 19,1	0,5(0,9)			
300 1150 6 90 500	4,8-5,0 11,6+0, 11,6+0, 10,1+0,	1 C, Sp. 1u. 2	•			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG chec	:k	1	Full-load s Setting po	•	_	cifications (4)	idle spec	-		cifications (5)	Torque o		(3)
	Control rod travel mm 2)	rev/min 3	Control rad travel rnm 4	Control red travel rnm 5	rev/min	rev/min 7	Cantral red travel rnm 8	rev/min 9	Control rod travel mm	rev/min 11	Control rod travel mm	•
600	19,1	-20,	8 600	19,9	10,6	1195-1210 1250-1280		4,3	100 300 335-	min.6,0 4,2-4,4 375 =2,0	1		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting f	ruel delivery cd (6)
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min 6	red travel cm ³ /1000 strokes:// mm 7
LDA 900 LDA 1150	0,7 bar 189,0 - 191,0 (186,0 - 194,0) 0,7 bar 185,0-189,0 (182,0-192,0)	-	LDA 600 LDA 500	0,7 bar 182,0 - 186,0 (179,0 - 189,0) 0 bar 139,0-141,0 (136,0-144,0)	100	140,0 - 160,0

Checking values in brackets

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 8 PLS 3807	0,44		11,1 - 11,3
+ RQPA 511-2		0,70	11,6 - 11,7
•		0	10,1 - 10,2
		0,34	10,5 - 10,7

Notes:

(1) when n =

rev/min and gauge pressure =

WPP 001/4 VOL 12,0 f1 2. Edition

PE 6 P 120 A 320 RS 3071

ROV 250-1025 PA 371

supersedes 81 company: Volvo engine: TD 120 GA

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		55-2.75)	mm (from BDC)			,
Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	3	4	2	3	6
700	11,4+0,1	20,5-20,8	0,5(0,9)			
250	5,6-5,7	2,2-2,6	0,5(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	ed		Lower rated	speed			Stiding s	leeve travel
deflection	Control	Control rod travel	(1)	Degree of deflection		Control re travel	od	Degree of deflection of control		Control re travel	od _		0
of control	rod travel	um rev/min	23	of control lever	rev/min	mm	•	lever	rev/min	mm .	(3)	1	mm .
1	2	3	_	4	5	6		7	8	9		10	11
max.	1100	15,2-17	,8	-	-	-		ca.12	100	min.7	,1	250	1,1-1,2
ca.40	10,4	1065-10	75	,					250	5,6-5	,7		2,9-3,3 5,1-5,4
	4,0	1145-11										1025	7,2
	1300	0 - 1,	U										
ł	1							③					L

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil ten			Fuel deliv high idle s	ery characteristics (5a) peed (5b)	Starting Idle switchir	. 0	Torque- travei	Control rod
rev/min	cm ³ /1000 strokes	rev/min 44)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
LDA 700	0,9 bar 205,0-208,0 (202,0-211,0	1065-1075*	LDA 700	0 bar 157,0-161,0 (154,0-164,0)	100	230,0-270,0 =RW 20,0- 21,0 mm	-	_

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.83

Testatn =

500

rev/min decreasing pressure ~ in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3071 +RQV PA 371	0,57	0,90 0 0,33	11,0-11,1 11,4-11,5 9,0-9,1 9,9-10,1

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications 0 Fuel Injection Pumps 1

WPP 001/4 RVI 12,0 a Edition

Testoil-ISO 4113

and Governors

PES 6 P 120 A 320 RS 3070

tubing 1 680 750 067.

ROV 250-1100 PA 495

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test supersedes8,81

company: RVI

MIDR 063540

223 kW (304 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	3,50-3,60	mm (from BDC)	= RW 9,0	- 12,0 mm	
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1100	12,9-13,	19,4 - 19,7	0,5(0,8)			
250	5,2-5,4	1,5 - 2,3	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection of control		Control rod travel mm rev/min (2s)	Intermediate Degree of deflection of control lever 4	rated spo rev/min 5	control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	sliding sl rev/min 10	oeve travel 1 mm 11
max.	1100 1400	15,2-17,8 0 - 1	-	-	-	ca.12	100 250	min.6,8 5,2-5,4	200 500 850	0,3-0,6 3,0-3,2 5,0-5,2
ca. 66	11,9 4,0	1160-1170 1235-1265				290-400			1150	8,4

Torque control travel s =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil terri		imitation intermediate speed	Fuel deliv high idle s	Ŭ.	switchin	ng point	travel	control (5) Control rod travel
rev/min	cm³/1000 strokes ·	rev/min 4	rev/min	cm ³ /1000 strokes		cm ³ /1000 strokes	rev/min	mm 9
LDA 1100	0,7 bar 194,0-197,0 (191,0-200,0)	1160-1170	LDA 1100	0 bar 151,0-154,0 (148,0-157,0)		130, 0-165, 0		
·					100-	170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.83

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 P. RS 3070	0,27		12,2 - 12,3
+ RQVPA 495		0,70	12,9 - 13,0
		0	10,6 - 10,7
		0,22	11,2 - 11,4
·			

Notes:

(1) when n =

rev/min and gauge pressure =

WPP 001/4 SAU 12,0 e

1. Edition

RO 200-1100 PA 279-1 PES 6 P 120 A 420 RS 3063, Z

supersedes -

Saurer company:

D 3 KTUB

engine: 155 kW (211 PS)

· Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Off Crosming at press	,	(3,13-3,33)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	9,0-9,1	13,4-13,8	0,5(0,8)			
250	5,6-5,8	1,3-1,9	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	g of slider	Full-load s	•	•		idle spec	•		aifiactions (E)	Torque o	\sim
PRG che rev/min 1	Control rodi travel mm 2	setting porev/min	Control rod travel mm 4	Control red travel	rev/min	Setting prev/min	Control red travel mm 8	rev/min 9	cifications (5) Control rod travel mm	rev/min	Control rod travel mm
550	15,6-16,4	550	16,0		1145-1160 1180-1210 0-1,0	250	5,7	100 250 340-	min. 7,1 5,6-5,8 380=2,0	1100 910 860 550	9,0-9,1 9,1-9,3 9,2-9,6 9,5-9,6
Torque C	control travel	<u> </u>	0,	3		<u> </u>	1	145-1	160 min ⁻¹		1 mm less contro

Torque-control travel on flyweight assembly dimension a =

0,3

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for lide spee	tuel delivery d Castru rad travel
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	ral tavel cm ³ /1000 strokes:/ mm 7
LDA 1100	0,7 bar 134,0-138,0 (131,0-141,0)	-	LDA 700 LDA 400	0,7 bar 143,0-147,0 (140,0-150,0) 0 bar 89,0-93,0 (86,0-96,0)	100	210,0-240,0

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. © 1980 by Robert Bosch GmbH. Postfach 50, 0-7000 Stuttgart 1 Printed in the Federal Republic of Germany amorimé en République Fédérale d'Allemagne per Robert Bosch GmbH.

Checking values in brackets

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

SAU 12,0 e

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PRS3063,Z +RQPA 279-1	0,26	0,70 0 0,11	9,3-9,4 9,5-9,6 8,3-8,4 8,6-8,8

Notes.

(1) when n =

rev/min and gauge pressure =

WPP 001/4 DAF 11,6 o 1 3. Edition

PE 6 P 120 A 320 RS 415

RSV 250-900P5/475

supersedes

DAF

engine

DKS-1160 E1160 206 kW (280 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,85-3,05)

estoil-ISO 4113

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
650 250	11,9-12,0 6,7-6,9	18,4-18,7 1,9-2,3	0,5 (0,9) 0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	1 3	rque control Control rod travel mm
loose	800 0,3 x = 5					ca.24	250	6,3	900 650	11,4-11,6 12,1-12,2
ca.46	940-950 025-109 200=0,3	55=4,0				,	250 395-455	6,7-6, 9 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load stop Test oil temp 40°C (104°F)		6 Rotational- speed limitat Note: Rotational- speed limitat			Starting f	uel delivery 5	4a) ld*	stop Control rod
	cm ³ /1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	travel mm 9
LDA 650	0,7 bar 184,0 - 187,0 (18 1,0 - 190,0)	940-950 *	900 LDA 600	0,7 bar 181,0-186,0 (178,0-189,0) 0 bar 129,0 - 132, 3 (126,0 - 135,0)	100	310 - 350 = 19,5 - 21,0 mm RW	250	6,7

Checking values in brackets

* 1 mm less control rod travel than col 2

12.82

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

	AAAAA		
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm , (1) .
PE 6 P RS 415 m.	0,7		11,9-12,0
RSVP5/475	,	0,26	11,4-11,5
		0,12	10,0-10,6
		0	9,8-9,9
-	•		
·			

Notes:

(1) when n =

rev/min and gauge pressure =

40

WPP 001/4 DAF 11,6 03

1. Edition

En

PE 6 P 120 A 320 RS 415-1

RSV 250-900 P 5/475

supersedes

company DAF

gine: DKS-E 1160 206 kW (280 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers.

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2,75-2,95)

mm (from BDC)

Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
11,9+0,1	18,4 - 18,7	0,5(0,9)			
6,7-6,9	1,9 - 2,3	0,8(1,2)			
	mm 2 2 11,9+0,1	travel mm 2 cm³/100 strokes 3 11,9+0,1 18,4 - 18,7	travel mm 2 cm³/100 strokes 3 cm³/ 100 strokes 4 11,9+0,1 18,4 - 18,7 0,5(0,9)	travel mm 2 cm³/100 strokes 3 cm³/100 strokes 4 cm³/ 100 strokes 2 11,9+0,1 18,4 - 18,7 0,5(0,9)	travel mm 2 cm³/100 strokes 2 cm³/100 strokes 4 cm³/100 strokes 2 cm³/100 strokes 3 cm³/100 strokes 3

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection	rated speed Control rod travel mm		Intermed	iate rated	sp en d 6	Control- lever deflection in degrees 7		rated speed Control rod travel mm	11 3 /	rque control Control rod travel mm
loose	800 x	0,3-1,0 = 5,0	-	-	•	ca. 24	250 250	6,3	650 900	12,1-12,2 11,4-11,6
ca. 46	10,4 4,0 1200	940-950 1025-1055 0,3-1,7					395-455	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F) cm³/1000 strokes	Rotational-speed limitat Note changed to) rev/min 3		el delivery aracteristics cm ³ /1000 strokes 5	Starting fildle rev/min 6	cm ³ /1000 strokes		stop Control rod travel mm 9
LDA 650	0,7 bar 184,0-187,0 (181,0-190,0)	940-950*	LDA 900 LDA 600	0,7 bar 181,0-186,0 (178,0-189,0) 0 bar 129,0-132,0 (126,0-135,0)	100	310,0-350, = 19,5 - 21,0 mm RW	0 250	6,8

Checking values in brackets

* 1 mm less control rod travel than col 2

12.82

BOSCH

Testato =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6P RS 415-1 + RSV P 5/475	0,27	0,70 0 0,12	11,4 - 11,5 11,9 - 12,0 9,8 - 9,9 10,0 - 10,6
	•		

Notes

(1) when n =

rev/min and gauge pressure =

WPP 001/4 BET 8,8 b 2. Edition

En.

PE 6 P 120 A 320 RS 377

ROV 250-1200 PA 425 R

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

companyRVI engine: MIDS 062 030 158 kW (215 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	2.8-2.9	mm (from BDC)	= RW 9.0	- 12,0 mm	
	Control rod travel	2,75-2.95) Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1200	12.7+0.1	15,2-15,5	0,4 (0.9)			
275	5,4-5,6	1,1-1,7	0.4 (1.2)			
	Ĭ .	1			1	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

deflection of control	rev/min Control rod travel	travel	10	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control laver 7	spead rev/min 8	Control rod travel mm 3	mm
max. ca.56	1240 11.7 4.0 1450	1320-135	50	-	-	-	ca.15 280-380	100 275	min.7,0 5,4-5,6	0,3-0,6 2,9-3,1 4,8-5,0 8,0
							39			

Torque control travel a =

៣ព

C. Settings for Fuel Injection Pump with Fitted Governor

Control-rod \$100		Rotational-speed 2b limitation intermediate speed	Fuel deliv high idle s	ery characteristics (5e) peed (5b)	Starting i Idle switchin	•	Torque-control 5 travel Control rot travel	
rev/min		rev/min 4a	rey/min 4	cm ³ /1000 strokes 5	rav/min 6	cm ³ /1000 strokes 7	rev/min 8	
LDA 1200	0,7 bar 152,0-155,0 (149,0-158,0)	1240-1250*	LDA 350	0 bar 51.0-55.0 (48.0-53.0)	100	19,5-21,0 mm RW	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.82

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE6PRS377	0,20		12,3-12,4
+ RQVPA 425 R		0,70	12,7-12,8
		0	11,1-11,2
		0,16	11,5-11,7
	·		
•			

Notes.

(1) when n =

rev/min and gauge pressure =

WPP 001/4 MB 11,8f

En 4. Edition

estoil-ISO 4113

PE 6 P 110 A 720 RS 371 Komb.-Nr. O 401 846 398 RQ 300/1100 PA 424 R

κψ 300/ i

supersedes10,82

company: Daimler Benz

engine: OM 355 A

(207 kW) 280PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery c:n ³ /100 st. okes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	11,7+0,	1 15,7 - 15,9	0,4(0,8)		·	
300	6,1-6,3	1,4-2,0	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of stider Full-load speed regulation			_	ation Idle speed regulation st specifications 4 Setting point Test specifications									
	Control rod travel	rev/min	Cambrol	Custral real travel rom 5	rev/min G	rev/min 7	Control red travel rnm 8	rev/min 9	Control rod travel mm	rev/min 11	Control rod		
650	19,2-20,8	650	20,0	10,7	1145-1160	300	6,2	100	min.8,2	1100	11,7-11,8		
VH =	max. 46°			4,0 1350	1195-1225 0 - 1,0	i		300 410-	6,1-6,3 450 = 2,0	650	11,7-11,9		
											1 mm less contro		

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

ram less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-toed delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel delive	ary characteristics 36	Starting fuel delivery Idle speed Control rad travi		
rgu/mun 1	cm ³ /-1000 strokes 2	r ge/min 3	rev/muh	cm³/-1000 strokes 5	rev <i>im</i> in 6	cm ³ /1000 strokes-/ mm 7	
LDA 1100	0,7 bar 157,0 - 159,0 (154,0 - 162,0)		LDA 1100	0 bar 142,0 - 144,0 (139,0 - 147,0)	100	140,0 - 160,0	
					100-22	0 (80-240)	

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure vvvvvvv

000	XXXXXXX		
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure ≈ bar	Gauge pressure = bar	mm (1) .
371 + 424 R	0,70	0,39 0,35 0	11,7 - 11,8 11,5 - 11,6 11,2 - 11,3 11,0 - 11,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 1 1 2. Edition

En

PE8P120A320LS3807 RQV 300-1150PA526-2 1-8-7-2-6-3-5-4 ie 45° ± 0,5° (± 0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

company Daimler-Benz OM 422 LA engine: 276 kW (375PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,95-4,15) mm (from BDC)

		0,30 1,107		-		
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
900	11,6+0,	18,9-19,1	0,5(0,9)			
300	4,8-5,0	1,2- 2,0	0,8(1,2)			
1150	11,6+0,1	C,Sp. 1 u. 2	0,75			
600 500	11,6+0,1 10,1+0,1	C, Sp.4 u. 5	0,75			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate rated speed			Lowar rated speed			Sliding sleave travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	(a) (29)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	1) mm 11
max.	1150	15,2-17	,8	-	•	••	ca.10		nin.6,0 4,2-4,4	250 550	,0-1,2 ,4-3,7
ca.65		1190-120 1230-126 0- 1,	0				320-465			850 4 1150	1,9-5,3 7,6

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter			peed 🕟	Starting Idle switching	. 0	Torque- travel	Control cod	
rev/min	cm³/1000 strokes .	rev/min 4	rev/min		rev/min		rev/min 8	travel mm
LDA 900 LDA 1150	0,7 bar 189,0-191,0 (186,0-194,0) 0,7 bar 185,0-189,0 (182,0-192,0)		DA 500 DA 500			140,0-160,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.83

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

000			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE8PLS3807 + PA526-2	0,44	0,70 0 0,34	11,1-11,3 11,6-11,7 10,1-10,2 10,5-10,7

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

1

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 14,6 1

2. Edition

PE 8 P 120 A 320 LS 3807

ROV 300-1150 PA 526

1-8-7-2-6-3-5-4 je $45^{\circ} \div 0,5^{\circ} (\div 0,75^{\circ})$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes 5.81 companyDaimler-Benz engina: OM 422 LA 276 kW (375 PS)

A. Fuel Injection Pump Settings

mm (from BDC) Zv1. Port closing at prestroke (3.95 - 4.15)Fuel delivery Spring pre-tensioning Control rod **Fuel delivery** Difference Rotational speed Control rod (torque-control valve) travel cm³/ cm³/100 strokes 100 strokes mri cm³/100 strokes rev/min mm 0.5(0.9)11,6+0,1 18,9-19,1 900 1,2-2,0 0,8(1,2) 4,8-5,0 300 c, Sp. 2 u.5 | 0,75(1,2) |11,6+0,1 1150/600 0,75 C, Sp. 5 10,1+0,1 500

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection of control		Control rod travel		0
of control lever	rod travel mm	mm rev/min 2s	of control lever	rev/min		lever	rev/min	mm 3	rev/min	mm 11
1	2	3	4	5	6	<u> </u>	8	9		
max.	1150	15,2-17,8		-	-	ca.10	100	min.6,0	250	1,0-1,2
							300	4,2-4,4	550	3,4-3,7
ca.65	10,6	1190-1200							850	4,9-5,3
	4,0	1230-1260	1			320-465			150	7,6
	1350	0 - 1,0				3				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Control-roc	Control-rod stop limitation		tational-speed 2b Fuel delivery characteristics 5e high idle speed 50			fuel delivery 6	Torque- travel	Control rod
rev/min	criti ³ /1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 900 LDA 1150	0,7 bar 189,0-191,0 (186,0-194,0) 0,7 bar 185,0-189,0 (182,0-192,0)		LDA 600 LDA 500	0,7 bar 182,0-186,0 (179,0-189,0) 0 bar 139,0-141,0 (136,0-144,0)		140,0-160,0		

Checking values in brackets

1 mm less control rod travel then col. 2

2.83

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

MB 14,6 1

-2-

		THU IT O I
Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = bar	Gauge pressure = bar	mm (1) .
0,44	0,70	11,1-11,3 11,6-11,7
	0 0,34	10,1-10,2 10,5-10,7
:		
	Gauge pressure = bar 0,44	Gauge pressure = bar Gauge pressure = bar 0,44 0,70 0,34

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 PP 001/4 MAN 11,1 q 8 and Governors

1. Edition

PES 6 P 120 A 720 LS 388 RQV 250-1100 PA 508 supersedes MAN

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

company: D 2566 MKF 235 kW (320 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(2.95-3.15)	mm (from BDC)	Zvl.	6 - RW 9.0-12.0) mm
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
750	13,1+0,1	21,7-22,0	0,5(0,9)			
250	6,3-6,5	1,1-1,7	0,8(1,2)			
					\ 	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed		Lower rated	speed	1		Sliding s	ieeve travel
Degree of deflection	rev/min Control	Control rod travel	(a)	Degree of deflection		Contro travel	l rod	Degree of deflection		Control re travel	od)		0
of control lever	rod travel	mm rev/min	(2a)	of control lever	rev/min	mm	•	of control lever	rev/min	mm	3	rev/min	mm
1	2	3		4	5	6		7	8	9		10	11
max.	1100	15,2-17	,8	-	-		-	ca.15		min.7, 6,3-6,	,	200 500	0,6-0,8 4,3-4,5
ca.64	10,3 4,0 1400	1140-11 1225-12 0 - 1	50 55 ,0							460 = 2	,	800 1100	5,9-6,1 8,5
								③					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Control-ro	load delivery high side speed (20) Fuel delivery chera immustion high side speed (50) Fuel delivery chera immustion high side speed (50)		osed (a)	cheracteristics(5e) Starting fuel delivery (6) Idle switching point				
rev/min	cfh³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 750	1,0 bar 217,0-220,0 (214,0-223,0)	1140-1150*	LDA 500	0,34 bar 145,0-150,0 (142,0-153,0		205,0-225,0	750	11,3+0, 13,1+0, 12,6+0,
LDA 1100	1,0 bar 180,0-185,0 (177,0-188,0)		LDA 500	0 bar 101,0-104,0 (98,0-107,0				11,8+0,

Chucking values in brackets

* 1 mm less control rod travel than col. 2

11.82

 \odot

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure increasing

200			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 388 + RQV PA 508	0,34	1,0 0 0,61	10,9-11,0 13,1-13,2 9,4-9,5 12,5-12,9

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP001/4MAN11,1 q 9

1. Edition

PES6P120A720LS388

0

Testoil-ISO 4113

RQV 250-1050 PA 508

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedge

companyMAN

engine: D2566 MK/319 235 kW (320 PS)

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from 8DC) Zy1. 6 - RW 9,0 - 12,0 mm Port closing at prestroke (2.95 - 3.15)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control red travel mns	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,1+0,1	21,7-22,0	0,5(0,9)			
250	6,3-6,5	1,1-1,7	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the velues in

B. Governor Settings

Upper rated :	peed			Intermediate	rated spi	eed	Lower rated	peed		Sliding sl	leeve travel
0.00	Control rod travel	travel		Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	l .
1	2	3	7	4	5	6	7	8	9	10	11
max.	1100	15,2-17,8	В	•	-	-	ca.11	100 250	min.7,1 6,3-6,5	200 480	
ca.63	10,3 4,0 1300	1090-1100 1175-120 0 - 1	5					1	45 = 2,0	770 1050	
							3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b timitation stermediate speed	Fuel deliv high idle s	ery characteristics (56) peed (50)	Starting Idle switchin	. 0	Torque- travel	Control rod
rav/min	cm ³ /1000 strokes .	rev/min 4	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
LDA 750 LDA 1050	1,0 bar 217,0-220,0 (214,0-223,0) 1,0 bar 180,0-185,0 (177,0-188,0)		LDA 500 LDA 500	0,34 bar 145,0-150,0 (142,0-153,0) 0 bar 101,0-104,0 98,0-107,0)		205,0-225,0	750	11,3+0, 13,1+0, 12,6+0, 11,6+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.82

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = b	ar Cauge pressure = ba	ar mm (1) .
PES6PLS388 +RQVPA508	0,34	1,0 0 0,61	10,9-11,0 13,1-13,2 9,4-9,5 12,5-12,9

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 MB 11,4 q

1. Edition En

PES 6 P 120 A 820 LS 3112

RSV 350-1100 PO/500

supersedes -

Daimler-Benz company

0M407A engine.

206 kW (280 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testefs

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0 - 4,1(3,95-4,15)

mm (from BDC)

Rotational speed rev/min 1	travel	Fuel delivery cm ^{1/} 100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100 350 600 500	11,5+0,1 4,7-4,9 11,8+0,1 10,5+0,1		0,5 (0,9) 0,8 (1,2) 0,75(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel mm		Intermed	hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3) To	rque control Control rod travel mm
loose	800 x =	0,3-1,0 3,25	-	-	-	ca. 25	350 420-460	4,8	1100 750 600	11,5-11,6 11,7-11,9 11,8-11,9
ca. 48	10,5 4,0 1300	1135-1145 1215-1245 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F)		6 Rotational- speed limitat		iel delivery laracteristics	Starting i	tuel delivery 5	44) ldk	e stop Control roc
rev/min	cm ³ /1000 strokes 2	Changed to) rev/min 3	rev/min 4	cm ³ /1 000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
LDA 1100	0,7 bar 175,0-177,0 (172,0-180,0)	1135-1145*	LDA 600 LDA 500	0,7 bar 177,0-183,0 (174,0-186,0) 0 bar 143,0-145,0 (140,0-148,0)	100	150,0-170,	0 -	_

Checlong values in brackets

* 1 mm less control rod travel than coi 2

Bosch Geschaftsbereinh KH. Kundendienst Kfz-Ausrustung c 1980 by Robert Bosch GmbH. Postfach 50, 0-7000 Stuttgart 1: Printed in the Federal Republic of Germany Imprime en Réprintique Fédérale d'Allemagne par Robert Bosch GmbH

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

MB 11,4 q

Pump/governor	Setting		Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1) .
PES6PLS3112	0,70			11,8 - 11,9
+ RSVPO/500			0,40	10,7 - 10,9
		•	0,50	11,6 - 11,7
			0	10,5 - 10,6
	·			

Notes.

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 MWM 1,5 c

5. Edition

En

EP/RSV 325-1500 A2B505DRengine

75 D..RS1235, 1252, 1298 ..RS1236, 1239, 1299 ..RS1237,1246, 1276, 1301 ..RS1238, 1302

EP/RSV 300-1000 A7B505DR Supersedes

5.79 MWM D 208 -

D 308 -

An test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

D 225 - 2..6 D 325 - 2..6

D 226 -D 327 -

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,2-2,3 (2,15-2,35)

mm (from BDC)

Rotational Spend revima 1	fravei	Fuel delivery "C" and "D" cm::100 strokes 3 7.50	Difference cm: 100 strokes 4	Control rod traver mm	Fuel delivery "C" and "D" cm 100 strokes 3 8 Ø	Spring pre-tensioning itorque-control valve- mm 6
1000	12	6,2-6,6	0,4	9	4,1-4,5	
	9	3,2-3,7		6	1,2-2,0	
200	9	2,1-2,8		9	2,7-3,7	

Adjust the fuel delivery from each out et according to the values in

B. Governor Settings

300-1000

			_								
Degree of deflection of control lever	r rated speed Control rod travel mm	Control rod travel mm resimin	Interme	diate rated	speed	Centrol lever def action in degrees	rev min	rated speed Control rod travel mm	revimin	rque control Control rod travel mm	
	-	19	-	13	6	ca.28	8	G.	10	11	
ca.68	1000 1050	16,0 8,5	wit	without auxilia			300	5,5	-	-	
	1100	2,4	spr			. ,	100 300	19-21 5,7-6,3			
ca.67	1030	8,0-9,0					450	0 - 1			
(2a)	1070 1120	2,0-4,0 0,3-1,0	with spr	n auxi ing	liary						

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	li load stop emp. 40. C (104. F)	Rotationalispeed limitar Note Speed limitar Speed Spee		Starting fuel delivery 5		4a) Idle stop		
rev/min 1	om v1000 strokes 2	changed to 1 rev/min 3	rev/min 4	cm3:1000 strokes 5	revimin	cm3 1000 strokes 7	revimini 8	travel mm
page	3 - 33!							
				spring has been values enclosed		ed		

Checking values in brackets

* 1 mm less control rod trave, than coil 2

4.83

Geschaftsbereich KH Kundendienst Ktz Ausrustung 1980 by Robert Bosch GmbH Postfach 50-0-7000 Stuffgart 1- Printed in the Federal Republic of German , Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH

1 Upper	ated speed		Intermediate	rated spe	ed	4 Lowe	r rated spo	eed	3 Torque control		
Degree of deflection of control lever	rés min	Control rod trave! mm	Degree of deflection of control lever	mm-yar	Control rod travel mm	Degree of deflection of control lever	rev-mir	Control rod travel	res imin	Control rod travel mm	
1	2	3	4	5	6	7	8	9	10	111	
ca.58	1500 1580	16,0 9,0	without auxiliary			ca.16	325	7,0	-	-	
	1630	4,2	spring				325 445-	7,4-7,6 505=2,0			
ca.56	1530 1580 1720	8,0-9,0 3,0-4,0 0,3-1,0	with auxiliary n spring				200-250				

2 Full-loa	ad stop	Rotational speed limitation			Starting fuel delivery idle		5a) Idle stop	
Test oil temp	cm"-1000 strokes	Note changed to) rev min	revimin	cm1/1000 strokes	rev min	cm ⁴ /1000 strokes	*ev min	Control rod travel mm
1	2	3	4	5	6	7	8	
page	3 - 33!							

Checking values in brackets

*1 mm less control rod travel than col. 2

The rating plate described on MWM 1.5 a has recently been modified to enable more precise adjustment on governors with torque control. The modification was carried out in columns n =engine speed and Q = (full-load quantity). Testing was extended to two speeds and two quantities.

Deviating from the instructions WPP 001/4, 1. Supplement "Adjustment of the governor and the pump", the following points now apply:

- (2) Adjustment as per rating plate n = 1 (1st speed) and Q = (1st quantity; or according to columns 1 and 2.
- (3) Adjustment is carried out until the control-rod travel changes, as read under (2), or (with the new rating plate) until the 2nd quantity is reached at the second speed; or as per columns 4 and 5.
- (6) Is to be adjusted as per rating plate n = (1st speed + 20 min-1); or as per column 3.

In the case of repairs to Fendt tractors on which the new rating plate hat not yet been attached (2nd speed and 2nd quantity), the full-load data applies, listed as per engine types; in accordance with the above instructions.

With new replacement pumps delivered from the Stuttgart warehouse, the spring retainer is not fitted! Order from MWM Co using the old rating plate.

Full-load data for Fendt tractors - Engine D 208/308

Only valid for engines with pumps

PES 3 A 75 C 320/3 RS 1236 and 39 PES 4 A 75 C 320/3 RS 1237

engine por Full-load de Control-roo Test oil tem	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchin		Intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	ww
1	2	3	4	5	6	7	8	

Fendt tractors - Output at speed - Engine and teactor type

General fitting - Output at speed

$$\frac{\text{B 30 PS}}{1500} \frac{\text{3000 min}^{-1}}{39,5-41,5} 1520$$

$$\frac{A 28 PS / 3000 min^{-1}}{1500 41,5-43,5} 1520$$

(1)

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load gelivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchin	fuel delivery ng point	Intermediate rotational speed Torque-control travel	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	•	5	0		0	

F 29 PS / 2600 min⁻¹
1300 43,0 - 45,0 1320

B 28 PS / 2600 min⁻¹
1300 41,0 - 43,0 1320

 $\frac{A 26 PS / 2600 min^{-1}}{1300 42,5-44,5} 1320$

 $\frac{\text{F 28 PS } / 2500 \text{ min}^{-1}}{1250 \quad 42.5 - 44.5} \quad 1270$

 $\frac{\text{B 27 PS} / 2500 \text{ min}^{-1}}{1250 \quad 40,5-42,5} \quad 1270$

A 25 PS / 2500 min⁻¹
1250 41,5 - 43,5 1270

 $\frac{\text{F 27 PS } / 2400 \text{ min}^{-1}}{1200 \quad 42,0-44,0} \quad 1220$

B 26 PS / 2400 min⁻¹
1200 40,0 - 42,0 1220

 $\frac{A 24 PS / 2400 min^{-1}}{1200 41,0-43,0} 1220$

F 26 PS / 2300 min⁻¹
1150 41,5 - 43,5 1170

 $\frac{8\ 25\ PS\ /\ 2300\ min^{-1}}{1150\ 39,5-41,5}$ 1170

A 23 PS / 2300 min⁻¹
1150 40,5 - 42,5 1170

engine po Full-load de Control-roe Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting I Idle switchin	ide delivery	Intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

$$\frac{\text{F 25 PS / 2200 min}^{-1}}{1100 \quad 41,0-43,0} \quad 1120$$

$$\frac{\text{B 24 PS } / 2200 \text{ min}^{-1}}{1100 39,0-41,0}$$
 1120

$$\frac{A 22 PS / 2200 min^{-1}}{1100 40.0 - 42.0} 1120$$

$$\frac{\text{F 24 PS } / 2100 \text{ min}^{-1}}{1050 \quad 40,5-42,5} \quad 1060$$

$$\frac{8 \ 22 \ PS \ / \ 2000 \ min^{-1}}{1000 \ 37,0-39,0} \ 1010$$

$$\frac{\text{B 16 PS } / \text{ 1500 min}^{-1}}{750 \quad 34, 0 - 36, 0} \quad 760$$

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting Idle switchir	,	Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

A 15 PS / 1500 min⁻¹
750 36,0 - 38,0 760

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deln	very characteristics	Starting fuel delivery Idle switching point			iate I speed control
rev/min	cm ³ /1000 strokes	rev/mm	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1,	2	3	4	5	6	7	8	

ev/min	CM-/1000 strokes	16Avilla)	1 GAVIIMI	CIN 7 1000 Strokes	_	_		
	2	3	4	5	6	7	8	
		•						
46,5	PS / 3000	min ⁻¹						
1500	42,0 - 44,0							
								
B 45	PS / 3000	min ⁻¹						
1500	39,0 - 41,0							
A 42	PS / 3000							
1500	40,5 - 42,5	1520						
- A.F	PS / 2800	min ⁻¹						
F 45								
1400	42,0 - 44,0	1420						
R 43	5 PS / 2800	min ⁻¹						
	39,0 - 41,0							
A 40,	5 PS / 2800	min ⁻¹				۵		
	40,0 - 42,0							
		-1						
		min ⁻¹						
1300	41,5 - 43,5	1320						
D 40	PS / 2600	-i1						
B 42								
1300	39,5 - 41,5	1320						
A 39	PS / 2600	min ⁻¹						
1300	40,0 - 42,0	1320						
1300	•							
F 42	PS / 2500	min ⁻¹						
1250	40,5 - 42,5							
		-1						
B 40	,5 PS / 2500							
1250	38,5 - 40,5	5 1270						
	F. DC / 2500	-1						
A 37	,5 PS / 2500	min ⁻¹						

1250

39,5 - 41,5

1270

engine pov Full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchin	,	intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	tu tu
1	2	3	4	5	6	7	8	

 $\frac{\text{F 39 PS } / 2300 \text{ min}^{-1}}{1150 \quad 39,5-41,5} \quad 1170$

B 37,5 PS / 2300 min⁻¹
1150 38,0 - 40,0 1170

A 34,5 PS / 2300 min⁻¹
1150 38,0 - 40,0 1170

F 37,5 PS / 2200 min⁻¹
1100 38,5 - 40,5 1120

B 36 PS / 2200 min⁻¹
1100 36,5 - 38,5 1120

A 33 PS / 2200 min⁻¹
1100 38,0 - 40,0 1120

F 36 PS / 2100 min⁻¹
1050 38,0 - 40,0 1060

B 34,5 PS / 2100 min⁻¹
1050 36,0 - 38,0 1060

A 31,5 PS / 2100 min⁻¹
1050 36,0 - 38,0 1060

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchir	,	Intermedi rotational Torque-ci travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		m m
1	2	3	4	5	6	7	8	

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation			Starting fuel delivery idle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 62	PS /	3000	min ⁻¹	
1500		- 42,5		1520

$$\frac{A 52 \quad PS \quad / \quad 2600 \text{ min}^{-1}}{1300 \quad 39,0-41,0} \quad 1320$$

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation			idle	Starting fuel delivery ldle switching point		iate I speed control
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ^{-/} 1000 strokes	1	511111
1	2	3		5	6	7	8	-
		_						
54	PS: / 2400 r	nin ⁻¹						
1200	39,0 - 41,0	1220						
B 52	PS / 2400 i	nin ⁻¹						
1200	37,5 - 39,5	1220						
A 48	PS / 2400 i	min ⁻¹						
1200	38,0 - 40,0	1220						
ғ. 52	PS / 2300	min ⁻¹						
1150	38,0 - 40,0	1170						
B 50	PS / 2300	min ⁻¹						
1150	36,5 - 38,5	1170						
A 46	PS / 2300	min ⁻¹						
1150	37,5 - 39,5							
F 50	PS / 2200	min ⁻¹						
1100	39,0 - 41,0							
B 48	PS / 2200	min ⁻¹						
1100	37,0 - 39,0	1120						
A 44	PS / 2200	min ⁻¹						
1100	38,0 - 40,0	1120						
F 48	PS / 2100	min ⁻¹						
1050	37,5 - 39,5	1060						
B 46	PS / 2100	min ⁻¹						
1050	35,5 - 37,5							
A 42	PS / 2100	min ⁻¹						
•		1050						

36,0 - 38,0

1060

1050

			**			-		
engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm.
1	2	3	4	5	6	7	8 -	

	_1	
F 46	PS / 2000 min ⁻¹	
1000	38,0 - 40,0 1010	
B 44	PS / 2000 min ⁻¹	
1000	35,5 - 37,5 1010	
A 40	PS / 2000 min ⁻¹	
1000	36,0 - 38,0 1010	
в 40	PS / 1800 min ⁻¹	
900	34,5 - 36,5 910	
A 36	PS / 1800 min ⁻¹	
900	34,0 - 36,0 910	,
B 32	PS / 1500 min ⁻¹	
750	30,5 - 32,5 760)
A 30	PS / 1500 min ⁻¹	
750	33,0 - 35,0 760	

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine pow Full-load de Control rod Test oil tem	trecy	Rotational-speed limitation	Fuel deliv	,	Starting (Idle switchin	ige, delivery	Intermed rotational Torque-t travel	speed
reviron [cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	revimin	cm ³ /1000 strokes	rev/min	mm
,	2	3	4	5	6	7	8	

En En

0

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Tour don't dry drive de la constant		Starting fuel delivery idle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 stro- es	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	tev/min	mm
1.		3	4	5	6	7	8	
 	4	+	+		1		T	•

F 81	PS /	2400	min ⁻	-
1200	38,0	- 40,0		1220

$$\frac{A 69 \quad PS \ / \ 2300 \ min^{-1}}{1150 \quad 37,0-39,0} \quad 1170$$

$$\frac{8 72 \quad PS \ / \ 2200 \ min^{-1}}{1100 \quad 36,0-38,0} \quad 1120$$

$$\frac{A 66 \quad PS \ / \quad 2200 \text{ min}^{-1}}{1100 \quad 37,0-39,0} \quad 1120$$

$$\frac{\text{F } 72 \quad \text{PS } / \quad 2100 \text{ min}^{-1}}{1050 \quad 37,0 - 39,0 \quad 1060}$$

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine por Full-load de Control-rod Test oil terr	elivery	Rotational-speed limitation	Fuel deliv		Starting Idle switchin		intermedi rotational Torque-c travel	speed
avimin	cm ³ /1000 strokes	rev/min	tea/win	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm.
1	2	3	4	5	6	7	8	ļ

PS / 2000 min⁻¹ F 69 36,5 - 38,5 1010 1000 PS / 2000 min⁻¹ B 66 1010 34,5 - 36,51000 PS / 2000 min⁻¹ A 60 35,0 - 37,01010 1000 PS / 1800 min⁻¹ B 60 33,5 - 35,5910 900 PS / 1800 min⁻¹ A 54 34,0 - 36,0910 900 PS / 1500 min⁻¹ B 48 31,0 - 33,0760 750 PS / 1500 min⁻¹ A 45 33,0 - 35,0760 750

 \bigcirc

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery ldle switching point		Intermed rotationa Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 35,5 PS / 3000 min⁻¹ 1520 800 52, 5 - 55, 555,0 - 57,01500 PS / 3000 min⁻¹ A 32 1520 1500 51,0 - 53,0PS / 2800 min⁻¹ F 41 800 55,5 - 58,5 1420 66,5 - 68,51400 F 38,5 PS __/ 2500 min⁻¹ 800 55,5 - 58,5 1270 62,5-64,51250 PS / 2500 min⁻¹ B 37 1270 800 52,5 - 55,5 1250 59,5 - 61,5 PS / 2500 min⁻¹ A 34 1270 1250 55,5 - 57,5 F 36,5 PS / 2300 min⁻¹ 800 55, 5 - 58, 560, 5 - 62, 51170 1150 PS / 2300 min⁻¹ B 35 800 52, 5 - 55, 5 1170 1150 58, 5 - 60, 5PS / 2300 min⁻¹ A 32 1170 1150 53,0 - 55,0PS / 2000 min⁻¹ F 33 1010 750 55,0 - 58,0 58, 5 - 60, 51000 PS / 2000 min⁻¹ B 31 52,5 - 55,5 750 55.0 - 57.01010 1000 A 28,5 PS / 2000 min⁻¹ F. 50,0-52,01010 1000

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	1 661 65 61		Idle		Intermediate rotational speed Torque-control travel	
١.	cm ³ /1000 strokes	rev/miñ	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	8 tea/win	mm
1	2	13	-	-				

B 28,5 PS / 1800 min⁻¹ 52,5 -554,5 910 750 52,0 - 55,0 900 PS / 1800 min⁻¹ A 26 48,0 - 50,0 910 900 PS / 1500 min⁻¹ B 24 46,5 - 48,5 760 750 50, 5 - 53, 5750 PS / 1500 min⁻¹ A 22 51,0 - 53,0 760 750

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery ldle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm .
,	2	3	4	5	6	7	8	
-			I	1	•	•		-

ev/min	cm³/1000 strokes	rev/min	rev/mm	5	6	7	8	
<u> </u>	2	3	+		 		1	
B 53	PS / 3000 i	min ⁻¹						
1500	54,5 - 56,5	1520	800	51,0 - 54,0	0			
A 48	PS / 3000	min ⁻¹						
1500	50,5 - 52,5	1520						
F 62	PS / 2800	min ⁻¹						
1400	66,5 - 68,5		800	54,0 - 57,	0			
F 58	PS / 2500	min ⁻¹						
1250	62,5 - 64,5	1270	800	54,0 - 57,	0			
B 56	PS / 2500	min ⁻¹						
1250	59,5 - 61,5		800	51,0 - 54,	0			
A 51	PS / 2500	min^{-1}						
1250	54,5 - 56,5							
F 55	PS / 2300	min ⁻¹						
1150	58,5 - 60,5		800	54,0 - 57,	.0			
B 53	PS / 2300	min ⁻¹						
1150	57,5 - 59,5		800	51,0 - 54,	,0			
A 48	PS / 2300	min ⁻¹						
1150	51,5 - 53,5			i i				
F 49,	5 PS / 2000	min ⁻¹						
1000	57,5 - 59,5		750	54,0 - 57	,0			
B 46.	5 PS / 2000	min ⁻¹						
1000	53, 5 - 55, 5		750	51,0 - 54	,0			
A 43	PS / 2000	min ⁻¹						
1000	48,5 - 50,5							

engine por Full-load de Control-rod Test oil ten	elivery	Rotational-speed	Fuel deliv		Starting (Idle switchin		Intermedi rotational Torque-ci traval	speed
rev/min	cm³/1000 strakes	rev/min	rev/min	cm ³ /1000 strokes	rev/mın	cm ³ /1000 strokes	tea/ww	mm
1	2	3	4	5	6	7	8	

B 43	PS / 1800 min ⁻¹				
900	52,5 - 54,5	910	750	52,0 - 55,0	
A 39	PS·/ 1800 min ⁻¹				
900	47,5 - 49,5	910			
B 36	PS / 1500 min ⁻¹				
750					
750	49,5 - 51,5	760	650	49,0 - 52,0	
A 33	49,5 - 51,5 PS /: 1500 min ⁻¹		650		

①

ingine po full-load d Control-ro Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchir	fuel delivery ng point	Intermed rotationa Torque-i	speed
ev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ³ /1000 strokes	rev/min	mm
)	2	3	4	5	6	7	8	
B 71	PS / 3000	min ⁻¹						
1500	54,5 - 56,5	1520	800	62,0 - 65,0	0			
A 64	PS / 3000	min ⁻¹						
1500	49,5 - 51,5	1520						
F 83	PS / 2800	min ⁻¹						
1400	65,5 - 67,5	1420	800	63,0 - 66,	0			
F 78	PS / 2500	min ⁻¹						
1250	61,5 - 63,5	1270	800	50,0 - 53,	0			
B 74,	5 PS / 2500	min ⁻¹						
1250	58,5 - 60,5	1270	800	50,0 - 53,	0			
A 68	PS / 2500	min ⁻¹						
1250	53, 5 - 55, 5							
F 73	PS / 2300	min ⁻¹						
1150	60,5 - 62,5		800	52,0 - 55,	0			
B 71	PS / ·2300	min ⁻¹						
1150	58, 5 - 60, 5		800	50,0 - 53,	.0			
A 64	PS / 2300	min ⁻¹						
1150	51,5 - 53,5							
F 66	PS / 2000	min ⁻¹						
1000	57,5 - 59,5		750	52,0 - 55	,0			
B 62,	5 PS / i 2000	min ⁻¹						
1000	53, 5 - 55, 5		750	50,0 - 53	,0			
A 57	PS / 2000	min ⁻¹						
1000	48,5 - 50,							

			The state of the s							
engine p Full-load Control-re Test oil te	delivery	Rotational-speed limitation	Fuel deli	very characteristics	ldle	fuel delivery	intermed			
rev/min	cm ³ /1000 strokes	rëv/min 3	rev/min	cm ³ /1000 strokes		cm ³ /1000 strokes	travel rev/min	mm		
•		T		 	10-		8	1		

B 57	PS / 1800 min ⁻¹				•	
900	51,5 - 53,5	910	750	49,0 - 52,0		
A 52	PS / 1800 min ⁻¹					
900	45,5 - 47,5	910				
B 48	PS / 1500 min ⁻¹					
750	48,5 - 50,5	760	650	47,0 - 50,0		
A 44	PS / 1500 min ⁻¹					

750

45,5 - 47,5

760

①

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		limitation			Starting fuel delivery lide switching point		Intermediate rotational speed Torque-control travel	
rev/min cm ³ /	1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1 2		3	4	5	6	7	8	

ev/min	cm ³ /1000 strokes	rev/min	rev/min			cm³/1000 strokes		mm
	2	3	4	5	6	7	8	
3 106	PS / 3000	min ⁻¹						
1500	55,5 - 57,5	1520	800	50,0 - 53,0)			
A 96	PS _ / 3000	min ⁻¹						
1500	49,5 - 51,5	1520						
F 125	PS /i 2800) min ⁻¹						
1400	66,5 - 68,5	1420	800	54,0 - 57,0) 			
F 117	PS / 2500) min ⁻¹						
1250	61,5 - 63,5		800	54,0 - 57,0)			
B 112	PS / 2500) min ⁻¹			-			
1250	58, 5 - 60, 5		800	50, 0 - 53,	0			
A 102	PS / 2500	0 min ⁻¹						
1250	53,5 - 55,5							
F 110	PS / 230	0 min ⁻¹					-	
1150	59,5 - 61,5		800	54, 0 - 57,	0			
B 106	PS / 230	0 min ⁻¹						
1150	56, 5 - 58, 5		800	50,0 - 53,	0			
A .96	PS / 230	0 min ⁻¹						
1150	51,5 - 53,5							
F 99	PS / 200	0 min ⁻¹						
1000	56,5 - 58,5		750	54,0 - 57,	0			
B 94	PS / 200	0 min ⁻¹						
1000	53, 5 - 55, 5		750	50,0 - 53,	0			
A 86	PS / 200	00 min ⁻¹						
1000	47,5 - 49,5							

engine po Full-load o Control-ro Test oil tei	delivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchir	fuel delivery ig point	intermedi rotational Torque-c travei	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
86		min ⁻¹	750	53,0 - 56,	0			
900	49,5 - 51,5	910	/50	55,0 - 56,	<u> </u>			

A 78	PS / 1800 min	_			
900	46,5 - 48,5	910			
B 72	PS / 1500 min	l			
750	49,5 - 51,5	760	650	47,0 - 50,0	

Α	6 6	PS	/	1500	min ⁻¹	
-				47,5		760

engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes		cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
								•
F 33	PS / 2800 m	nin ⁻¹						
1400	51,5 - 53,5	1420	800	46,0 - 49,0)			
		1						
F 32	PS / 2500 r		900	44 0 - 49 0				
1250	52,5 - 54,5	1270	800	46,0 - 49,0				
B 31	PS / 2500 i	min ⁻¹						
1250	49,5 - 51,5	1270	800	44,0 - 47,0)			
		1		· · · · · · · · · · · · · · · · · · ·				
A 28	PS / 2500							
1250	49,5 - 51,5	1270						
F 30	PS / 2300	min ⁻¹						
1150	48,5 - 50,5	1170	800	46,0 - 49,0)			
		-1						
	5 PS / 2300				_			
1150	45,5 - 47,5	1170	800	44,0 - 47,0	0			
A 26	PS / 2300	min ⁻¹						
1150	45,5 - 47,5							
F 26		min ⁻¹	000	44.0.40	^			
1000	43,5 - 45,5	1010	800	46,0 - 49,	<u> </u>			
B 25	PS / 2000	min ⁻¹						•
1000	41,5 - 43,5		800	44,0 - 47,	0	•		
A 23		min ⁻¹						
1000	41,5 - 43,5	1010						
A 21	PS / 1800	min ⁻¹						
900	41,5 - 43,5							
			<u></u>					
A 17		min ⁻¹						
750	39,5 - 41,5	760						

engine po Full-load di Control-roi Fest oil ten	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchin	fuel delivery ng point	intermed rotationa Torque- travel	l speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min	mm
1	2							•
F 50	PS / 2800	min ⁻¹						•
1400	48,5 - 50,5	1420	800	46,0 - 49,	0			
F 48,5	S PS / 2500	min ⁻¹						
1250	50,5 - 52,5	1270	800	46,0 - 49,	0			
B 46,5	S PS / 2500	min ⁻¹						
1250	47,5 - 49,5	1270	800	43,0 - 46,	0			
A 42	PS / 2500	min ⁻¹						
1250	47,5 - 49,5	1270						
F 46	PS / 2300	min ⁻¹						
1150	47,5 - 49,5	1170	800	46,0 - 49,	0			
B 44	PS / 2300	min ⁻¹						
1150	45,5 - 47,5	1170	800	43,0 - 46,	0			
A 40	PS / 2300	min ⁻¹						
1150	45,5 - 47,5	1170						
F 40	PS / 2000	min ⁻¹						
1000	44,5 - 46,5		800	46,0 - 49,	0		•	
B 38,5	5 PS / 2000	min ⁻¹						
1000	42,5 - 44,5		800	43,0 - 46,	.0			
A 35	PS / 2000	min ⁻¹						
1000	42,5 - 44,5							
A 31,5	5 PS / 1800	min ⁻¹						
900	40,5 - 42,5							
A 26	PS / 1500	min ⁻¹						
750	39,5 - 41,5							

En E13

engine po Full-load o Control-ro Test oil te	delivery	Rotational-speed limitation	Fuel dein	very characteristics	idle	fuel delivery ng point	Intermed rotationa Torque- travel	i speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	ļ
F 68	PS / 2800 49,5 - 51,5) min ⁻¹	800	46,0 - 49,0	0			
F 66	PS / 2500	0 min ⁻¹						
1250	50,5 - 52,5		800	46,0 - 49,0	0			
B 63	PS / 2500	0 min ⁻¹						
1250	47,5 - 49,5		800	44,0 - 47,	0			
A 57,	5 PS / 250	0 min ⁻¹					-	
1250	47,5 - 49,5	5 1270						
Fti	PS / 230	0 min ⁻¹						
1150	47,5 - 49,	5 1170	800	46,0 - 49,	0			
B 58,	5 PS / 230	0 min ⁻¹						
1150	45,5 - 47,	5 1170	800	44,0 - 47,	0			
A 53,	5 PS / 230	0 min ⁻¹						
1150	45,5 - 47,	5 1170						
F 53	PS / 200	0 min ⁻¹						

F 53	PS /	2000	min ⁻¹

800

A 46,5 PS / 2000 min⁻¹

PS / 1800 min⁻¹ A 42

PS / 1500 min⁻¹ A 35 39,5 - 41,5 750

760

rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min mm 5 6 7 8	engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	rue de la comor y construe de la comor de		Starting fuel delivery Idle switching point		Intermed rotational Torque-c travel	speed
		_	rev/min	rev/min		1.	cm³/1000 strokes	1.00	mm

2	3		4 5	6	7	8	
			1	•	•		
102	PS / 2800 min	l 					
400	49,5 - 51,5	1420	800	46,0 - 49,0			
99	PS / 2500 min	1					
250	50, 5 - 52, 5	1270	800	46,0 - 49,0			
3 95	PS / 2500 min	1					
1250	47,5 - 49,5	1270	800	44,0 - 47,0	_		
		1					
A 86 1250	PS / 2500 min 47,5 - 49,5						
F 92 1150	PS / 2300 min 47,5 - 49,5	 1170	800	46,0 - 49,0			
1150							
B 88	PS / 2300 min	1170	800	44,0 - 47,0			
1150	45,5 - 47,5						
A 80	PS / 2300 min						
1150	45,5 - 47,5	1170					
F 80	PS / 2000 min	-1					
1000	43,5 - 45,5	1010	800	46,0 - 49,0			
B 77	PS / 2000 min	-1					
1000	41,5 - 43,5	1010	800	44,0 - 47,0			
A 70	PS / 2000 mir	-1					
1000	41,5 - 43,5	1010					
A 63	PS / 1800 min	n-1					
900	40,5 - 42,5	910					
		₂ -1					
	,5 PS / 1500 mi	760					
750	39,5 - 41,5	/60					

1

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delive:y Control-rod stop Test oil temp ୧୯୨୯ (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	ļ .	cm ³ /1000 strokes	rev/min	mm.
1	2	3	4	5	6	7	8	
		1						
B 48	PS / 3000				_			
1500	47,0 - 49,0	1520	800	49,5 - 52,5	5 			
A 43,5	PS / 3000	min ⁻¹						
1500	44,0 - 46,0	1520						
F 55	PS / 2800	min ⁻¹						
1400	53,5 - 55,5	1420	800	52,5 - 55,5	5			
F 53	PS / 2500	min ⁻¹						
1250	55,5 - 57,5	1270	800	52, 5 - 55,	5			
B 50	PS / 2500	min ⁻¹						
1250	52,5 - 54,5	1270	800	49,5 - 52,	5			
A 46,	5 PS / 2500	min ⁻¹						
1250	48,0 - 50,0	1270						
F 50	PS / 2300	min ⁻¹						
1150	56,0 - 58,0	1170	800	51,0 - 54,	0			
B 48,	5 PS / 2300	min ⁻¹						
1150	51,5 - 53,5		800	49,5 - 52,	5	.		
A 44	PS / 2300	min ⁻¹						•
1150	47,0 - 49,0	1170						
F 46	PS / 2000	min ⁻¹						
1000	54,0 - 56,0	1010	750	52,5 - 55,	5			
B 44	PS / 2000	min ⁻¹						
1000	50,5 - 52,5	1010	750	50,0 - 53,	0			
A 40	PS / 2000	min ⁻¹						
1000	46,0 - 48,0	1010						

rots otherways

0

C. Settings for Fuel Injection Pump with Fitted Governor

760

engine pov Full-load de Control-rod Test oil tem	Hivery	Rotational-speed limitation	Fuel deliv	Ci y di la della la	Starting I Idle switchin	del delivery	Intermedi rotational Torque-0 travel	speed
	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	ШЩ
1	2	3	-	3			-	1

B 40 PS / 1800 min⁻¹
900 49,5-51,5 910 750 50,0-53,0

A 36,5 PS / 1800 min⁻¹
900 45,0-47,0 910

B 33,5 PS / 1500 min⁻¹

 $\frac{A 30.5 PS / 1500 min^{-1}}{750 43.5 - 45.5} 760$

47,5 - 49,5

750

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load d Control-roi Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchin	fuel delivery ng point	Intermed rotational Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	l .	cm ³ /1000 strokes		mm
1	2	3	14	5	6	7	8	
B 64	PS / 3000 r							
1500	47,5 - 49,5	1520	800	49,0 - 52,0) 			
A 58	PS / 3000 i	min ⁻¹						
1500	44,0 - 46,0	1520						
F 74	PS / 2800	min ⁻¹						
1400	53,5 - 55,5	1420	800	52,0 - 55,0	0			
F 70,5	5 PS / 2500	min ⁻¹						
1250	52,5 - 54,5	1270	800	52,0 - 55,	0			
B 67	PS. / 2500	min ⁻¹						
1250	49,0 - 51,0	1270	800	49,0 - 52,	0			
A 61	PS: / 2500	min ⁻¹						
1250	44,5 - 46,5	1270						
F 67	PS / 2300	min ⁻¹						
1150	51,5 - 53,5		800	52,0 - 55,	0			
B 64,	5 PS. / 2300	min ⁻¹						
1150	49,0 - 51,0		800	49,0 - 52,	,0			
A 58.	5 PS / 2300	min ⁻¹						•
1150	44,5 - 46,5							
F 61	PS / 2000	min ⁻¹						
1000	50,0 - 52,0		750	49,5 - 52	,5			
B 58,	5 PS / 2000	min ⁻¹						
1000	48,0 - 50,0		750	49,5 - 52	,5			
A 53	PS / 2000	min ⁻¹						
1000	44,0 - 46,0						•	

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed Irmitation			Starting Idle switching		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	_	mm
1	2	3	4	5	6	7	В	

B 53 PS / 1800 min⁻¹
900 47,0 - 49,0 910 750 49,5 - 52,5

 $\frac{A 49 \quad PS \ / \quad 1800 \, min^{-1}}{900 \quad 43,0-45,0} \qquad 910$

 $\frac{\text{B }44,5 \text{ PS } / 1500 \text{ min}^{-1}}{750 \quad 47,0-49,0} 760$

 $\frac{A \stackrel{41}{41} \quad PS \quad / \quad 1500 \text{ min}^{-1}}{750 \quad 43,0 - 45,0} \qquad 760$

engine pov full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deliver		idle	fuel delivery ng point	intermed rotationa Torque- travel	i speed
ev/min	cm ³ /1000 strokes	rev/min	1 1	n ³ /1000 strokes		cm ³ /1000 strokes	rev/min 8	mm
	2	3	4 5		6	/	10	+
96	PS / 3000 m	nin ⁻¹						
1500	51,5 - 53,5	1520	800	50,0 - 53,0				
A 87	PS / 3000 r	min ⁻¹		•				
1500	47,5 - 49,5	1520						
F 112	PS / 2800	min ⁻¹						
1400	58,0 - 60,0	1420	800	53,0 - 56,0)			
F 106	PS / 2500	min ⁻¹						
1250	57,5 - 59,5	1270	800	53,0 - 56,0)			
B 101	PS / 2500	min ⁻¹						
1250	54,0 - 56,0	1270	800	50,0 - 53,0)			
• 00	PS / 2500	min-1						
A 92 1250	49,0 - 51,0							
		_1						
F 101 1150	PS / 2300 57,5 - 59,5		800	53,0 - 56,	0			
B 97		min ⁻¹	800	50,0 - 53,	0			
1150	55,0 - 57,0							
A 88		min ⁻¹						
1150	50,0 - 52,0							
F 92	PS / 2000	min ⁻¹						
1000	52,5 - 54,5		750	50,0 - 53,	0			
B 88	PS / 2000	min ⁻¹						
1000	50,0 - 52,		750	50,0 - 53,	,0			
A 80	PS / 2000) min ⁻¹						

engine por Full-load de Control-roo Test oil terr	elivery	Rotational-speed limitation	Fuel delivery characteristics		Starting Idle switchin		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 80	PS / 1800 min ⁻¹	_				
900	50,0 - 52,0	910	750	50,0 - 53,0		
	•					
A 73	PS / 1800 min ⁻¹	_				
900	45,5 - 47,5	910				
B 67	PS / 1500 min ⁻¹					
750	50,0 - 52,0	760	650	52,0 - 55,0		
A 61	PS / 1500 min ⁻¹	L 				
750	45,5 - 47,5	760				

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 VOL 7,0 a

4. Edition

En

PE 6 P 100/320 RS 100

RQV 200-1200 PA 122/2 R

supersed**6.74** companyVolvo

engine: TD 70

(A)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres Rotational speed rev/min		Fuel delivery cm³/100 strokes	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve)
1000	12,0	12,7-13,4	0,5			2,5 ⁺ 0,1 (max. 2,2-2,9)
600 600 600 200	9,0 12,0 15,0 9,0	6,1-7,3 11,3-12,7 16,5-18,2 4,2-5,2				(max. 2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated sp	peed	,	Intermediate	rated sp	eed	Lower rated	speed		Slidina s	leeve travel
deflection	rev/min Control	Control rod travel	Degree of deflection		Control rodi travel	Degree of deflection		Control rod travel		1
1. 6	rod travel mm	mm rev/min (2a)	of control lever	rev/min	mm (4)	of control lever	revanin	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1290 1550 1200 1300 1400 1500	15,0-18,0 0 15,0-17,8 7,7-12,6 0 - 7,6 0	-	-	-	ca. 23	200 300 400 500 590	8,6-10,0 6,4-8,8 2,9-5,4 0,7-2,7	1290	8,3

Torque control travel a = - mm abnorm. sldg-sleeve pos'n = 36,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 limitation intermediate speed	Fuel delin	very characteristics 5a peed 5b	Starting Idle switchir	. •	Torque- travel	control 5
rev/min	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA	0,7 bar .	1230-1240 *	LDA	0 bar	100	150,0-180,0	-	-
700	70,0-72,0 (69,0-73,0)		700	59,5-6,25 (58,5-63,5)	200	11,0-15,0		
				[isper	sionmax, 2,5		

Checking values in brackets

* 1 mm less control rod travel than col. 2 4.83

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

VOL 7,0 a

500			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 100 + RQVPA 122/2R	0,11-0,14	0,05-0,11	

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control fod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 13,8 a 8 1. Edition

PE 6 P 120 A 720 RS 167

ROV 225-1100 PA 478 R

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes. company: Fiat engine 8210-02.422 Komb.-Nr. 0 401 846 428

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2.0 - 2.1

Port closing at pres	stroke (1,95-2,15)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mrn.
1	2	3	4	2	3	6
1100	11,4+0,1	17,6-17,9	0,5 (0,8			
225	7,5-7,7	1,7-2,3	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	p ee d rev/min	Control rod (1	Intermediate Degree of	e rated sp	Control rod	Lower rated Degree of	speed	Control rod	Sliding s	leeve travel
of control	Control rod travel mm	maver C	deflection of control lever	rev/min	mm 4	deflection of control lever	rev/min	mm 3	rev/min 10	mm 11
max.	1100	15,2-17,	3 -	-	-	ca. 11	100	min.9,1	200 500	0,7-0,8 2,8-3,0
ca.61	10,4 4,0 1350					295-405	225	7,5-7,7	800 1100	4,7-4,9 8,0
						3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel delivingh idle s	ery characteristics 5a peed 5b	Starting Idle switching	. •	Torque- travei	Control rod
rev/min		rev/min 4a	rev/min	cm ³ /1000 strokes	١.	cm ³ /1000 strokes	rev/min	travel mm
1100	176,0-179,0 (173,0-182,0)	1140-1150*	_	- -	100	19,5-21,0 mm. HW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.83

Testoil-ISO 4113

 \odot

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/ 4 IHC 7,6 C

2. Edition

En

PES 6 MW 100/320 RS 1103 RQV 350-1300 MW 43-1 0 403 446 132

DHK 1 688 901 016 207 + 3 bar supersedes 12.82 company: IHC-USA engine: DT 466 B 143.4 kW (195 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

4,00-4,10 mm (from BDC) RW = 9,0 - 12,0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
900	10,9+0,1	9,55-9,75	0,35(0,6)			
350	5,7-5,8	1,6 - 2,0	0,35(0,55	\		
1300 500	10,9+0, ⁴	I	0,65(0,7)			
				<u> </u>	<u> </u>	<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	,	Lower rated	speed	1		Sticking st	eeve travel
Degree of	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control n travel mm 6	od ①	Degree of deflection of control lever 7	rev/min 8	Control r travel mm 9	3	rev/min 10	mm 11
max.	8,0 0-1	1440-1505 1550	-	-	-		ca.13	•	min.9 5,8-6	-		
ca.61,5	4,0	1470-1480					360-700					
							3a					

Torque control travel a =

ma

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (20) timitations intermediate speed	Fuel delivingh idle s	rery characteristics 50 poed 50	Starting idle switching	. •	Torque-	control (5)	
rev/min	cm³/1000 strokes	revimen 4a 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ² /1000 strokes 7	rev/min 8	9	
LDA 900	0,9 bar 95,5-97,5 (93,5-99,5)		LDA 1300 LDA 500	(94,5-102,5) 0 bar 63.5-65.5		19-21 mm RW 140-180 280 (210-290)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = ba	r Gauge pressure = b	ar mm (1) .
RS 1103 mit			
RQVMW 43-1	0,4		10,5 - 10,6
		0,9	10,9 - 11,0
		0	9,4 - 9,5
		0,2	9,8 - 9,9
	•		
7 1.			

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1.57 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications 0 Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 18,3 d 1

supersedes _

1. Edition

PF 10 P 110 A 320 LS 3818-1

ROV 350-1150 PA 678

company: Daimler-Benz

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4

OM 423

0 -27 -72 -99 -144-171-216-243-288-315° ± 0,5° (± 0,75°)

Testoil-ISO 4113

261 kW (355 PS)

Komb.-Nr. 0 401 849 709

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	A B	3.95-4.15)	mm (from BDC)	RW 9.0 -	- 12 0 mm	
	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /1 00 strokes 3	mm 6
1150	12,4+0,1	12,2-12,4	0,4(0,8)			
350	8,5-8,7	1,4-2,2	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	rev/min Control rod travel	Control rod ta travel mm rev/min 2s	Intermediate Degree of deflection of control lever	rated spore	Control rod travel mm 4	Lower rated: Degree of deflection of control lever 7	rev/min	Control rod travel	Sliding s rev/min 10	mm
max.	1200 11,4 4,0 1400	15,2-17,8 1190-1200 1250-1280 0-1,0	-	-	-	ca.18 330-500	100 350	min.10,0 8,5-8,7	580	1,2-1,4 3,6-3,9 5,2-5,6 7,8
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

uit-load de Control-roc est oil tem		Rotational-speed (2b) tirritation intermediate speed	Fuel delivingh idle s	ery characteristics (56) peed (50)	Starting Idle switchin	. 0	Torque- travel	Control cod
ev/min	cft ³ /1000 strokes .	ravimin 40	rev/min	cm ³ /1000 strokes	rev/min 6	cm³/1000 strokes 7	rev/min 8	
1150	122,0-124,0 (119,0-127,0)	1190-1200*	600	112,0-116,0 (109,0-119,0)	100	130,0-150,0	600	12,4+0, 12,9+0
1150	92,0-94,0 (89,0-97,0)		900	113,0-118,0 (110,0-121,0)			900	12,6+0

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Reduced-delivery stop

3.83

BOSCH

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 RVI 8,8 b 1 5. Edition

<u>En</u>

PES 6 P 120 A 320 RS 417 ROV 300-1150 PA 527 K

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750_067.

supersed 1.82 company RVI engine: MIDS 062030 158 kW (215 PS) Komb.-Nr. 0 402 046 226

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9

Port closing mark 9,5° after port closing

(2,75-2,95)

mm (from BDC)

Zyl.1

		2,13-2,331				
Rotational speed rev/min	Control red travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1150	8,5-8,6	14,8-15,0	0,5(0,9)			
600	2,7-2,8	1,3-1,9	0,8(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of defrection of control		Control rod travel		1
lever		rev/min (28	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	200	15,2-17,8	-	- .	-	ca.10				0,4-0,7 3,6-3,7
ca. 58	7,5 4,0	1205-1215 1275-1305	-			330-445			850 1150	5,1 - 5,2 7,5
	1400	0-1,0				3				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten	i stop	Rotational-speed 20 ilmitation intermediate speed	Fuel deliv	ery characteristics (5e) peed (5b)	Starting Idle switchir	. •	Torque- trayel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min	travel mm
1150	147,5-149,5 (144,5-152,5)		750 500	132,0-138,0 (129,0-141,0 30,0-86,0 (77,0-89,0	100 300	129,0-140,0 18,0- 24,0 229 (100)	350 750	8,5+0,1 7,0+0,4 7,7+0,2 7,2+0,3

Checking values in brackets

* 1 mm less control m d travel than col. 2

3.83

Test Specifications Fuel Injection Pumps ① and Governors

①

Testoil-ISO 4113

WPP 001/4 RVI 8,8b

5. Edition

PES 6 P 120 A 320 RS 417 RQV 300-1200 PA 527 K

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

' supersedeg_81 company:RVI engine: MIDS 062030 158 kW (215 PS)

All test specifications are valid for Bosch Fuel Injection Pump (Test Benches and Testers

A. Fuel Injection Pump Settings Port closing mark 9,5° after port closing

Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
2	3	4	2	3	6
9,3-9,4	15,4 - 15,6	0,5(0,9)			
4,1-4,3	1,8 - 2,4	0,5(1,2)			
	mm 2 9,3-9,4	travel mm cm³/100 strokes 2 3 9,3-9,4 15,4 - 15,6	travel cm ³ /100 strokes cm ³ / 2 cm ³ /100 strokes cm ³ / 100 strokes 4 9,3-9,4 15,4 - 15,6 0,5(0,9)	travel mm cm³/100 strokes 2 cm³/ 100 strokes 4 cm³/ 2 9,3-9,4 15,4 - 15,6 0,5(0,9)	travel mm cm³/100 strokes 2 cm³/100 strokes 4 cm³/ 100 strokes 2 cm³/100 strokes 2 cm³/100 strokes 3 9,3-9,4 15,4 - 15,6 0,5(0,9)

Adjust the fuel delivery from each outlet according to the values in ______.

B. Governor Settings

Upper rated :	speed		Intermediate	rated sp	eed	Lower rated	sp ee d		Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		. ①
of control lever	rod travel	mm rev/min 2a	of control lever	rev/min	mm 4	of control lever	rev/min 8	mm 3	rev/min 10	mm 11
<u> </u>	2	3	-	3	 	 	-		1	
max.	1200	15,2-17,8	_	-	-	ca. 10	100	min. 5,7	250	0,4-0,7
ca. 60	8,3 4,0 1500	1240-1250 1330-1360 0-1,0				330-445	300	4,1-4,3		3,6-3,8 5,3-5,4 8,0
						③				0,0

Torque control travel a =

ma

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 irrutation intermediate speed	Fuel delivingh idle s	ery characteristics 50 poed 50	Starting Idle switchin	. •	Torque- travel	Control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	tea/wiu	cm ³ /1000 strokes	LGA/LUNU	
1	2	3	4	5	6	7	8	9
1200	154,0-156,0. (151,0-159,0)		800 500	140,5-146,5 (137,5-149,5) 82,0-88,0 (79,0-90,0)	300	130,0-150,0 18,0- 24,0 100-220 (80-240)	350	9,3+0,1 7,7+0,2 8,5+0,2

Chucking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 IHC 5,8t

2. Edition

VE 6/12 F 1350 R64

0 460 426 016

supersedes_{6.82} Nozzle-and-holder assembly company: IHC 1 688 901 020 (172 + 3 bar) engine: D 358/PC 11

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/.

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings	•	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1100	5,0-5,4	mm		
1.2 Supply pump pressure	1100	5,4-6,0	bar (kgf/cm²)		
1.3 Full-load delivery without	1150	84,0-85,0	cm ³ /1000 strokes		3,5
charge-air pressure Full-load delivery with			cm ³ /1000 strokes		
charge-air pressure 1.4 Idle speed regulation	500	14,5-20,5	cm³/1000 strokes		3,5
1.5 Start	100	min.100,0	cm³/1000 strokes		1
1.6 Full-load speed regulation	1450	9,0-17,0	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery					

2. Test Spec		Υ		1100		1250
2.1 Timing device	n = rev/min	600 1,6-2,4(1,3	3-2,7)	(4,5-5,9)		,3(5,2-6,6)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,7-3,3			6	1350 5,3-6,9
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-	153)		55-13	1350 38(40 - 158)
2.3 Fuel deliveries	1	1			3. Dimer	ISIONS for assembly and adjustment
Speed control lever	Rot speed rev/min	Fuel delivery cm³/1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	1510 1450 1400 1300	9,0-17,0 44,0-50,0 80,0-83,0	(8,0-18,0) (42,0-52,0 (78,5-84,5)		K KF MS	3,2-3,4 5,7-5,9 1,0-1,2
	1150 800 500	77,0-81,0 63,0-68,0	(81,5-87,5) (76,0-82,0) (61,8-69,2)		svs	max.6,0
switch-off	1350	0			A XK	20,2-22,2 15,8-19,8
idle stop	520 - 570 500	0	(12,5-22,5)			of the pointer
End stop	250 350	min. 100 max. 80				oke of 1 mm in to outlet "A"
2.4 Solenoid	max. cut-in voltag	xxxx min	n. 10,0 V ge 12V.			

Test Specifications Distributor-type Fuel-injection Pumps

40

WPP 001/4 PER 5,8b3 2. Edition

n

VE 6/12 F 1300 L 73

0 460 426 020

supersede6.82

Nozzle-and-holder assembly company: Perkins. 1 688 901 020 (172 + 3 bar) engine: T 6.354.4

Overflow temperature 45° C

All test specifications are valid only for Boach Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,3

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	600	3,1-3,5	mm	0,75	
1 2 Supply pump pressure	600	3,4-4,0	bar (kgf/cm²)	0,75	
1.3 Full-load delivery without charge-air pressure	1000	92,0-95,0	cm ³ /1000 strokes	0	
Full-load delivery with charge-eir pressure	1000	98,0-99,0	cm ³ /1000 strokes	0,75	3,5
1.4 Idle speed regulation	300	10,0-14,0	cm ³ /1000 strokes	0	3,5
1.5 Start	100	min.100,0	cm³/1000 strokes	0	
1.6 Full-load speed regulation	1550	5,0-13,0	cm ³ /1000 strokes	0,75	
1,7 Load-dependent start of delivery					

2. Test Spec	ifications	checking values in	brackets ()				
2.1 Timing device- LDA=0,75 bar	n = rev/min mm	400 0,4-1,2(0,1	l - 1,5)	600 (2,6-4,0) 800 3,6-4,4(3,3-4,7)			
2.2 Supply pump LDA=0,75 bar	n = rev/milit ber (kgf/cm²)	400 2,4-3,0)			300 9 -7,5	
Overflow delivery	n = rev/min cm³/10 s	500 55-138(40-	153)		-	300 8(40 - 153)	
2.3 Fuel deliveries	1				3. Dimen	for assembly	
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²) 0,75	Designation	and adjustment mm	
End stop	1550 1480 1300 1000 1000		(4,0-14,0) (40,0-50,0) (88,5-94,5) (90,5-96,5) (95,5-101,5)	0,75 0,75 0 0,75	K KF , MS	5,1-5,3 1,1-1,3	
	* 700 500	92,5-96,5 85,0-89,0	(91,5-97,5) (83,3-90,7)	0,32	svs	max.6,0	
switch-off	1300	0			A XK	20,2-22,2	
idle stop	300 350 400	min.1,0 max.1,0	(7,0-17,0)		compensa	-pressure tor stroke	
End stop	100 200	min.100 max. 85				on at the g nut. (46)	
2.4 Salenaid	max. cut-in volta	xxx min.	10,0 V ge 12V.				

BOSCH Gascherts c 1960 by

ischäftsbereich KM. Kundenglenet. KTz-Austratung. 1880 by Robert Bosch, Gmörl, Poetfech 50, D-7000 Stuttgert 1. Printed in the Federal Republic of German.

Test Specifications Distributor-type Fuel-injection Pumps

40

WPP 001/4 VOL 3,6 n 1
1. Edition

En

VE 6/11 F 1800 L 18 0 460 416 001 supersedes - company: Volvo

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting 0,2 mm

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgt/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	3,2-3,6	mm	0,74	
1.2 Supply pump pressure	1500	6,0-6,7	bar (kgf/cm²)	0,74	
1 3 Full-load delivery without	500	47,0-49,0	cm ³ /1000 strokes	0	
charge-air pressure Full-load delivery with	1500	63,5	cm³/1000 strokes	0,74	3,0
charge-air pressure 1.4 Idle speed regulation	325	8,0	cm³/1000 strokes	0	2,0
1.5 Start	<i>-</i> 100	min. 72,0	.m³/1000 strokes	0	
1.6 Full-load speed regulation	2040	19,5-25,5	cm ³ /1000 strokes	0,74	
1.7 Load-dependent start of delivery					

2.1 Timing device	n = rev/min	1000	1500		1800	
DA = 0,74 bar	mm	0,7-1,7(0,5-1,9)	(2,/-4,1)	(2,7-4,1) 4,5-5,3(4,2-5,6)		
.2 Supply pump .DA = 0,74 bar	n = rev/min bar (kgf/cm²)	400 2,0-2,7		1800 6,9-7,6		
Overflow delivery	n = rev/min cm ³ /10 s	500 55-110(40-125)	A COLUMN TO SERVICE STATE STAT	55-11	1800 0(40-125)	
2.3 Fuel deliveries	Rot speed	; Fuel delivery	Charge-air press	3. Dimen	Sions for assembly and adjustment	
Speed control lever	rev/min	cm³/1000 strokes	bar (kgf/cm²)			
End stop	2140-2220 2120	0 max. 6.0	0,74	K	-	
	2040	(18,0-27,0)	0,74	KF	5,9-6,2	
	1800 1500	57,2-59,8 (55,8-61,2) (61,3-66,7)	0.74	MS	1,5-1,7	
	* 500 500	51,5-53,5 (49,1-55,9) (44,6-51,4)	0,28	svs	max.4,2	
switch-off	4000			A .	5,8-10,8	
	1800	0		8	10,4-15,6	
idle stop	370-450 325	0 (5,5-14,5)		Manifold- compensat = 4,0 mm	pressure or stroke	
2.4 Solenoid	max. cut-in voltag					

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 2,4 f 1. Edition

VE 6/10 F 2150 L 105 0 460 406 014

supersedes

company: VWW

engine:

087 T-LT

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

see VDT-W-460/...

1. Settings	Rat. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,3-2,7	mm	0,75	
1.2 Supply pump pressure	1500	5,9-6,5	bar (kgf/cm²)	0,75	
1.3 Full-load delivery without	600	23,5-24,5	cm ³ /1000 strokes	0	
charge-air pressure Full-load delivery with	1500	41,5-42,5	cm ³ /1000 strokes	0,75	
charge-air pressure 1.4 Idle speed regulation	375	6,0-10,0	cm ³ /1000 strokes	0	
1.5 Start	100	min. 38,0	cm³/1000 strokes	0	
1.6 Fuil-load speed regulation	2400	9,0-15,0	cm ³ /1000 strokes	0,75	
1.7 Load-dependent start of delivery	-				

2. Test Spec		checking values in brain	ckets ()	1500	2	150
2.1 Timing device DA = 0.75 bar	n = rev/min			• • • • • • • • • • • • • • • • • • • •		•
.5.1 0 , 7 - 0	mm	0,5-1,3(0,2-	1,6)	(1,8-3,2)		<u>(4,1-5,5)</u> 150
2.2 Supply pump	n = rev/min	600			_	
DA = 0,75 bar	bar (kgf/cm²)	3,5-4,1			7,6-	8,2
Overflow delivery	n = rev/min	600			2	150
O'ISINOW CONTONY	cm ³ /10 s	55-138(40-15	3)		55-138	(40-153)
2.3 Fuel deliveries	1				3. Dimen	Sions for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	2600	max. 3,0		0,75 0,75	K	3,2-3,4
	2400 2150	9,0-15,0 35,0-37,0 (33.7-38.3)	0,75	KF	6,3-6,6
	1500	35,0-37,0 (39,7-44,3)	0,75	MS	1,0-1,2
	750 600	32,5-33,5 (30,7-35,3) 21,0-27,0)	0,3	svs	max.3,8
					XK	20,2-22,2
switch-off					XE	8,6-11,9
elect.	400	0			75	0,0-1.,5
Idle stop	375 450	max. 2,5	4,0-12,0)		Observations Manifold-	•
End stop	400 500	min. 25 max. 27			= 4,5 mm Correctio	or stroke n at the nut. (46)
2.4 Solenoid	max. cut-in volt 裕裕為後於XX	ee xxx min. 10 rated voltage	12V.			

BOSCH

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 2,4e

1. Edition

supersedes VWW 087-LT

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

VE 6/10 F 2150 L 104

0 460 406 013

see VDT-W-460/...

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,8-3,2	mm		
1 2 Supply pump pressure	1500	5,5-6,1	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure	1500	28,0-29,0	cm ³ /1000 strokes		3,0
Full-load delivery with charge-air pressure	-	-	cm ³ /1000 strokes		
1.4 Idle speed regulation	375	6,0-10,0	cm ³ /1000 strokes		3,0
1 5 Start	100	min.38,0	cm³/1000 strokes		
1.6 Full-load speed regulation	2400	9,0-15,0	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery	-				·

2.1 Timing device	n = rev/min	1000 0,7-1,5(0,4	4-1,8)	1500 (2,3-3,7)		150 7(4,6-6,0)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 3,0-3,6				150 3-7,9
Overflow delivery	n = rev/min cm³/10 s	600 55-138(40-	153)			150 (40 - 153)
2.3 Fuel deliveries					3. Dimen	ISIONS for assembly and adjustment
Speed control lever	Rot. speed	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	2600 2400 2150 1500 750	max. 3,0 23,0-25,0 25,0-28,0	(8,0-16,0) (21,7-26,3) (26,2-30,8) (23,5-29,5)		K KF 'MS SVS	3,2-3,4 6,4-6,7 1,4-1,6 max.4,2
switch-off elect.	400	0			A XK	20,2-22,2
idle stop	375 500	max. 2,0	(4,0-12,0)		Observations	
End stop	400 500	min. 25 max. 27				
2.4 Solenoid	max. cut-in volta	nge xxx min. K:rated volta	. 10 V ge 12V.			

F10

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 REN 2,0g

1. Edition

VE 4/9 F 2100 R 97-1 0 460 494 115

supersedes

company: Renault engine: 852-718

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1,1 Tirning device travel	1400	4,4-4,8	mm		
1.2 Supply pump pressure	1400	4,8-5,4	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure	1400	38,0-39,0	cm ³ /1000 strokes		2,5
Full-load delivery with	-	-	cm ³ /1000 strokes		
charge-air pressure 1.4 Idle speed regulation	400	7,5-11,5	cm ³ /1000 strokes		2,5
1.5 Start	100	min. 52	cm³/1000 strokes		
1.6 Full-load speed regulation	2250	14,0-20,0	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery	-				,

2. Test Spec	cifications	checking values in	brackets ()			
2.1 Timing device	n = rev/min mm	1000 2,6-3,4(2,	,3-3,7)	1400 (3,9-5,3)		000 (5,9-7,3)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	1000	4			000 -6,8
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-	-153)	an translating an infiltranchiment despendent	2 55 - 138(100 40 - 153)
2.3 Fuel deliveries			***		3. Dimen	SIONS for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgt/cm²)	Designation	mm
End stop	2450 2350 2250 2100 1400 1000 600	max. 1,0 1,0-5,0 33,1-35,1 35,3-38,3 32,5-35,5	(13,0-21,0) (31,8-36,4) (36,2-40,8) (34,5-39,1) (31,0-37,0)		K KF MS SVS	3,2-3,4 5,7-6,0 1,4-1,6 max.3,8
switch-off	21000	0			s XL	7,9-11,2
idle stop	400 650	max. 5,0	(5,5-13,5		Observations	
End stop	280 400	min. 45 max. 45				
2.4 Solenaid	max. cut-in voltag	<pre>xxx min. rated volta</pre>	. 10 V .ge 12V.			

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 REN 2,0 e 3. Edition

VE 4/9 F 2400 R 95 0 460 494 105

supersedes 12.82 company: Renault engine: F8M

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

1. Settings	Rot. spead rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1400	4,1-4,5	mm		
1.2 Supply pump pressure	1400	4,9-5,5	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure	1000	30,7-31,7	cm ³ /1000 strokes		2,5
Full-load delivery with charge air pressure	-	-	cm³/1000 strokes		
1.4 Idle speed regulation	425	6,0-10,0	cm ³ /1000 strokes		2,5
1.5 Start	100	min. 42,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	2650	10,5-16,5	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery	1400				

2.1 Timing device	u = tes/wiu	1000 2,3-3,1(2,0	1400 3,6-5 (3,6-5)	2000 ,0) 6,3-7,1	(6,0-7,4) 7	2400 ,0-7,7(6,6-8,
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,5-3,1				2400 ,7-8,3
Overflow delivery	n = rev/min cm³/10 s	600 55-138(40-1	153)		•	2400 38(40-153)
2.3 Fuel deliveries					3. Dimen	for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop switch-off	2750 2650 2500 2400 2100 1400 1000 600		(9,5-17,5) (21,0-29,0) (26,5-31,1) (27,8-32,4) (30,4-35,0) (28,9-33,5) (23,7-29,7)		K KF MS SVS	3,2-3,4 5,7-5,9 1,2-1,4 2,8 18,7-20,7 9,5-12,8
Idle stop End stop	650 600 425 330 500	0 0,2-5,2 min. 30,0 max. 29,0	(4,0-12,0)		Observations	·
2.4 Solenoid	max. cut-in volta	ge xxx min. x rated volta	10,0 V ige 12V.			

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 OPE 2,3 c 1. Edition

VE 4/9 F 2000 R 37-2

0 460 494 126

supersedes. company: Vauxhall

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

2. Test Specifications checking values in brackets (

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	2000	7,9-8,3	mm		
1 2 Supply pump pressure	2000	6,9-7,5	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure Full-load delivery with	1250	41,5-42,5	cm ³ /1000 strokes cm ³ /1000 strokes		2,0
charge-air pressure 1.4 Idle speed regulation	300	6,0-10,0	cm ³ /1000 strokes		2,0
1.5 Start	⁵ 100	min. 54,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	2440	11,0-17,0	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery	2000	-			

z. rest sp e	HILGHOUS	checking values in bracke	rts ()			
2.1 Timing device	n = rev/min mm	600 1,2-2,2(1,0-2	2,4)	1250 4,4-5,2(4,1-	5,5) (7,	2000 ,4-8,8)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 3,6-4,2		1250 5,1-5,7		
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-153	3)			2000 3(40-153)
2.3 Fuel deliveries					3. Dimen	Sions for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	2520 2440 2000 1250 600	34,2-36,8 (33	9,7-44,3)		K KF MS SVS	3,2-3,4 5,4-5,7 1,7-1,9 max.3,4
switch-off	2000	0			X4K XeL	20,2-22,2
Idle stop	500 350 300	max. 1,0 min. 2,0	,0-12,0)		Observations	
End stop	350 450	min. 38,0 max. 38,0				
2.4 Solenoid	max. cut-in voltag	xxx min. 10 rated voltage	,0 V 12V.			

WPP 001/4 IHC 6,6a 1.. Edition

Festoil-ISO 4113

VE 6/12 F 1250 R 38

800

supersedes.

company: IHC engine: DT 402/3994

0 460 426 007 Setting of the pointer at a stroke of 1 mm in Overflow temperature 45° C relation to outlet "A".

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test instructions and Test Equipment

Pre-stroke setting

0,4

 $mm \pm 0.02(0.04)$ mm

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1000	3,5-4,1	mm		
1.2 Supply pump pressure	1000	4,9-5,5	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure	900	117,5-118,5	cm ³ /1000 strokes		2,5(4,5)
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	500	15,0-21,0	cm ³ /1000 strokes		2,5(4,5)
1.5 Start	⁵ 100	min.95,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	56,0-64,0	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery					

2.1 Timing device	n = rev/min	600		1000	1	200
	mm	1,3-2,1(1,0	-2,4)	(3,1-4,5)		(4,3-5,7)
2.2 Supply pump	n = rev/min ber (kgf/cm²)	400 3,2-3,8				250 6-6,2
Overflow delivery	n = rev/min cm ³ /10 s	500 55-110(40-	125)		_	250 (40-125)
2.3 Fuel delivenes					3. Dimen	for assembly
Speed control lever	Rot. speed	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	1370-1420 1300 1230 900 700 500	0 108,5-111,5 97,0-101,0 92,0-96,0	(55,0-65,0) (107-113) (115-121) (96,0-102,0 (90,2-97,8)		K KF MS SVS	5,4-5,6 0,8-1,0 4,6-6,0
switch-off	1250	0			XK B XL	20,2-22,2
ldie stop	520-570 500		(13,0-23,0)		Observations	
End stop	260 380					
2.4 Solenoid	max. cut-m volta	ge .				

Bosch Geschäftsbereich KH. Kundendienst: Kfz-Ausrustung

1980 by Ropert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Fédérale d'Aljemagne per Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SCA 14,2 d

1. Edition

PE 8 P 120 A 920/4 LS 7008

RQV 200-950 PA 547-1

supersedes company Scania

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

DSC 1401 engine Komb.-Nr. 0 402 648 807

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

For closing at pro-		(4,45-4,65)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	14,2+0,1	20,1-20,3	0,7(0,9)			3,3 [±] 0,1
225	4,6-4,8	1,4-1,8	0,3(0,6)			(3,0-3,5)
						**

Adjust the fuel delivery from each outlet according to the values in

** Due to smoothing of the sealing edge, the initial spring tension with a new delivery-valve holder must be adjusted to 3,0 mm.

B. Governor Settings

Upper rated s	speed		Intermed	Intermediate rated speed			speed		Sliding sleeve travel	
	rev/min Control	Control rod (1	Degree of deffection	n	Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rod travel	mm rev/min (2	of contro		mm 4	of control lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	990	15, 2-17, 8	-	-	-	ca. 9	100	min.5,9	150	0,5-0,9
ca. 60	13,2	990-1000					225	4,4-4,6	420	3,0-3,5
ļ	4,0	1115-1145				-	310-3	70 = 2.0	680	4,8-5,1
	1250	C-1, O				(3a)			950	7,4

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Imitation intermediate speed	Fuel deliv	rery characteristics 58	Starting idle switchir	9	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 700	0,9 bar 201,0-203,0 (198,0-206,0)	LDA 950 LDA 500	0,9 bar 194,0-202,0 (192,0-206,0) 0 bar 156,0-160,0 (154,0-162,0)		250,0-300,0 bei 20,021,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure increasing

Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = ba	Gauge pressure = bar	mm (1)
0,35	0,90 0 0,24	13,6 - 13,7 14,2 - 14,3 11,5 - 11,6 12,1 - 12,3
	Gauge pressure = bar	Gauge pressure = bar Gauge pressure = bar 0,35

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

6

F16

0

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 i 2

1. Edition

PES 6 P 110 A 720/3 RS 3036 Komb.-Nr. 0 402 036 713

ROV 300/450-950 PA 375 KR

supersedes

MACK

company:

ETAZ 673 AEXP engine

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuei Injection Pump Settings

Port closing at pres	troke	(2.35-2.55)	mm (from BDC)		
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
r ev /min 1	។ាកា 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
900	15,1+0,1	23,1 - 23,3	0,4			
300	5,0-5,2	1,2-2,2	0,4			1
_						

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	rev/min	Control rod (1/2 travel mm rev/min (2/3)	of control	rev/min	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	Stiding s	mm
max.	970	16,2-17,8	-	-	-	ca. 18,5	250	9,8-11,3	-	0,2-1,2
ca. 63	14,1 4,0 1200	990-1000 1115-1145 0 - 1,0				<u>3a</u>	400	7,9-8,1 3,8-5,2 -635=2,0	480 710 950	3,8-4,3 5,5-5,9 8,2

Torque controi travei a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		intermediate speed	ingiriuse :	very characteristics 5a	i i i i i i i	fuel delivery 6	Torque- travel	Control od
rev/miń 1	cm ³ /1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min 6	cmi#1000 strokes	rev/min	travel mm
900	230,5-232,5	990-1100 *	725 600	231,5-234,5 212,5-215,5	100	110,0-170,0 = ca. 12,0 mm RW	725 700	15,1 15,2+0,1 15,0+0,1 max.14,5 13,9+0,1
		<u> </u>	<u> </u>					

Checking values in brackets

* 1 mm less control rod travel than cot. 2

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 VOL 4,5 a

2. Edition

PES 4 MW 100/320 RS 1102

0 403 444 103

ROV 300-1150 MW 39-1

supersedes

company: Volvo-BM

engine

TD45

70 kW (95 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	itroke	2,80-2,90 (2.75-2.95)	mm (from BDC)	RW 9 - 1	2 mm	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm . 2	cm ³ /100 strokes 3	mm 6
700	11,0+0,1	8,5 - 8,7	0,35(0,6)			
300	6,4-6,5	1,3 - 1,7	0,35(0,55			
1000	11,0+0,1	_	0,55(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	eed		Lower rated	speed	•		Sliding s	eeve travel
deflection	rev/min Control	nave.	19	Degree of deflection		Control rod travel		Degree of deflection of control		Control rod travel		1	
of control lever	rod travel mm	um ((28)	of control lever	rev/min	mm (4)		rav/min	mm	(3)	rev/min	mm
1	2	3		4	5	6		7	8	9		10	11
max.	1150 1400	15,2-17, 0 - 1,						ca. 11	100 300	min.7, 5,6-5,			
ca.46	10,0 4,0	1190-120 1230-126						320-520					
								3 a					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed 2b limitation intermediate speed	Fuel deliv high idle s		Starting Idle switchir	. •	Torque-control 5 travel Control rod travel		
rev/min	cm ³ /1000 strokes .	rev/min 4e	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min		
1	2	3	4	5	6	7	8	9	
700	85,0-87,0 (83,0-89,0)	1190-1200*	1000	88,0-92,0 (86,0-94,0)	100	max. 14ඊ,0			
					100-2	220 (80-250)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.83

Test Specifications Fuel Injection Pumps 1 WPP 001/4 VOL 4,5 d and Governors

1. Edition

PES 4 MW 100/320 RS 1102 RQV 300-1200 MW 39-2 0 403 444 104

Testoil-ISO 4113

supersedes

Volvo company:

TD 45 engine:

82,5 kW (112 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2.75-2.95) mm (from BDC) RW 9.0 - 12.0						
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)		
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6		
700	11,0+0,1	9,5 - 9,7	0,35(0,6					
300 1000	6,5-6,6 11,0+0,1	i	0,35(0,5 0,55(0,7	1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

000	deflection of control		Control rod travel mm rev/min	(a) (28)	Intermediate Degree of deflection of control lever 4	1	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control root travel mm (Sliding sl rev/min 10	mm
-	max.	1200 1450	15,2-17 0 - 1	,8 ,0				ca.12	100 300	min.8 6,5-6			
	ca.48		1240-125 1290-13						400-	-550 = 2	,0		
								39					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil terr		Rotational-speed 20 limitation intermediate speed	Fuel delivery characteristics 5e high ide speed 50		Starting I Idle switchin	. 0	Torque- travel	Control rod
rev/min		rev/min 49	rev/min 4	cm ³ /1000 strokes 5	rav/min 6	cm ³ /1000 strokes 7	rev/min 8	9 9
700	95,0-97,0 (93,0-99,0)	1240-1250*	1000	94,0-98,0 (92,0-100,0)		19 - 21 mm RW max. 140		
					100-	-220 (80-250)		<u> </u>

Checking values in brackets

1 mm less control rod travel than col. 2

3.83

WPP 001/4 0MB 4,4 d 1

3. Edition

En

supersedes 11.74

OMB

CO 3

RSV 325-1050 A 4 B 1079 DL company:

1 - 3 - 4 - 20 -90 -180-270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)

PES 4 A 90 D 410 RS 2195 Z

mm (from BDC)RW 10.5

Port closing at presi	JORG	2.15-2.25		,.		
Rotational speed		Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1050	11,3	7,9 - 8,0	0,3(0,45			
	+0,1					
325	6,4-6,6	0,9 - 1,5	0,2(0,4)		1	
600		C.Sp. 4-5	0,4(0,55			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	deflection travel of control		Intermediate Degree of deflection of control lever 4	Degree of Control rod Control of control		Degree of deflection of control lever rev/min mm 4 Lower rated speed Control travel travel 7 8 9			3 Tor	que control Control rod travel mm
loose ca.63	800 X = 1090-1 1135-1 1300 =	145 = 4,0		•		ca.26		6,0 min.19,0 6,4-6,6 15 =2,0 0 - 1,0	1050 500 375	11,3- 11,4 11,3- 11,5 11,5- 12,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.	(3a) Fuel delivery characteristics		Starting Idle	fuel delivery	(5a) idle stop		
Test oil temp. 40°C (104°F) revimin cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1050	79,5 - 80,5 (77,5 - 82,5)		600	69,5 - 72,5 (67,5 - 74,5)	100	19,0-21,0			

Checking values in brackets

1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 PEN7,0 c 1 2. Edition

En

PE6P100A320RS291Z RSV200-1200P1/305R

Komb.-Nr. 0 401 876 264

supersedes 10.82

Volvo-Penta

D 70 B/PP

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC RW 9,0 - 12,0 mm

or closing a proc		(2,13-2,33)				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
700	8,5-8,6	5,6-5,8	0,3(0,6)			_
225	5,8-6,0	1,0-1,4	0,25(0,5	1		
					•	
					<u> </u>	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper I Degree of deflection of control lever	Degree of Control rod deflection control		deflection travel		Degree of deflection of control lever rev/min 7 8 9				que control Control rod travel mm	
loose	800 X=5	0,3-1,0	-		-	ca.22		5,4 min.20,0	-	-
ca.64	7,5 4,0 1400	1240-1250 1260-1290 0,3- 1,7						5, 8- 6,0 95 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop	6 Rotational- speed limitat.	(3a) Fuel delivery characteristics		Starting Idle	fuel delivery	(5a) Idle stop		
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes.		rev/min cm³/1000 stroke		rev/min 8	Control rod travel mm	
700	56,0-58,0 (54,0-60,0)	1240-1250*	-			210,0-260,0 = 20,0- 21,0mm RW		-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.83

WPP 001/4 MB 11,4 o

2. Edition

En

PES 6 P 120 A 820 LS 3095

RSV 350-750 P1/487

supersedes 82 companyDaimler-Benz

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

engine: OM 407 A 169 kW (230 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4.0 - 4.1 (3.95-4.15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
730	12,4+0,	19,6 - 19,8	0,5(0,8)			
350	5,7-5,9	3,0 - 4,0	p,8(0,7)			
				<u> </u>	<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe			rated spe		3 Torque control	
Degree of deflection		Control rod travel	Degree of deflection		Control rod travel	Degree of deflection of control		Control rod travel		Control rod travel
of control	rev/min	mm	of control lever	rev/min	mm	lever	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	700	0,3-1,8	-	-	•	-	-	-	-	-
	x =	2,25								
ca. 33	11,4 4,0 900	745-760 765-795 0,3-1,7				·				

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 2		6 Rotational- speed limitat.		Fuel delivery characteristics		Starting fuel delivery Idle		5a Idle stop	
		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min	Control rod travel mm 9	
730	196,0-198,0 (19 3 ,0-201,0)	745-760 *	-	-	100	170,0-190,0	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 14,6 q 3. Edition

PE 8 P 120 A 320 LS 3807 RQ 300/1150 PA 546

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067. All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers supersedes 10.82

company: Daimler-Benz

engine: OM 422 A

243 kW (330 PS)

Komb.-Nr. 0 401 848 733

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.95-4.15)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150 300 600 900/500	10,7+0,1 5,2-5,4 		0,5(0,9) 0,8(1,2) 0,7(1,1) 0,7(1,1)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider Full-load speed re			gulation	Idle speed regulation			Torque control				
PRG che	ck 1	Setting po	oint	Test spe	cifications (4)	Setting p	point	Test spe	cifications (5)		(3)
rev/กเกิ	Control rod travel mm	rev/min	Control rod travel rnm	Control rod travel rnm	rev/min	rev/min	Control rod travel	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	19,2-20,8	600	20,0	9,7	1200-1215 1235-1270	300	4,5	100 300	min.6,0 4,4-4,6		10,7-10,8 11,4-11,5
VH =	max. 46°			7,0	1233-1270			340-			10,8-11,0
			2	·			14	00 12	F = 1		
	Torque-control travel on flyweight assembly dimension a =			mm	Spe	eed regula		00-12	5 min -		1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel delivery characteristics 3b		Starting fi Idle spee	Contral
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:// mm 7
LDA 1150	0,7 bar 156,5-158,5 (153,5 - 161,5)	•	LDA 900	0,7 bar 164,0 - 168,0 (161,0 - 171,0)	100	120,0 - 140,0
LDA 600	0,7 bar 166,0 - 172,0 (163,0 - 175,0)	•	LDA 500	0 bar 137,0 - 139,0 (134,0 - 142,0)		

Checking values in brackets

4.83

D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 g -

Test at n =

500

rev/min increasing pressure – in bar gauge pressure

300					
Pump/governor	Setting	Measurement	diminution Control rod travel- difference		
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .		
PE 8 PLS 3807 +PA 546	0,47	0,70 0 0,40	11,2-11,3 11,4-11,5 10,5-10,6 10,6-10,7		

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 HPP 001/4 IHC 7,6 g and Governors

2. Edition

supersedes 12.82

IHC DT 466 B

121,4 kW (165 PS)

PES 6 MW 100/320 RS 1108 RQV 350-1200 MW 43-5

0 403 446 139

DHK 1 688 901 016 207 + 3 bar

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	III OKO	3,00-3,10	mm (from BDC)	RW - 9.0	_ 12,0 mm	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
800	10,5+0,1	8,3-8,5	0,35(0,6)			
350	5,8-5,9	1,6-2,0	0,35(0,55			
1200	10,5+0,1		0,65(0,7)			
500	9,2-9,3					

Adjust the fuel delivery from fach outlet according to the values in [

B. Governor Settings

Upper rated s	pper rated speed Intermediate rated speed				ed .	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		mm (1)
lever 1		rev/min (2a)	lever 4	rev/min 5	mm (4) 6	lever 7	rev/min 8	mm (3) 9	rev/min 10	11
max.	8,0 0-1	1360-1400 1460	-	-		ca.14		min. 9,0 5,8-5,9		
ca.58,5	4,0	1360-1370				360-640				
						③				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed (20) Fuel delivery chillimitation intermediate speed		ery characteristics (5a)	y characteristics (5e) Starting fuel delivery (6) idle switching point			Torque-control (5) travel Control rod travel	
rev/mm	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm	
1	2	3	4	5	6	7	8	9	
LDA 800	0,9 bar 83,0-85,0 (81,0-87,0)		LDA 1200 LDA 500	0,9 bar 88,5-92,5 (86,5-94,5) 0 bar 59,0-61,0 (57,0-63,0)	100 220-	19-21 mm RW 140-180 280 (210-290)			

Chucking values in brackets

* 1 mm less control rod travel than col. 2

3.83

G1

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

Pump/g_vernor	Setting		Measurement	Control red trave	diminution t- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1)	•
RS 1108 ± RQV MW 43-5	0,9			10,5	- 10,6
			0	9,2	- 9,3
			0,2	9,7	- 9,8
			0,34	10,2	- 10,3
	•				
1				<u> </u>	

Notes.

(1) vhen n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1.57 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps and Governors

40

WPP 00 1/4 MB 3,0 m

2. Edition

PES 5 MW 55/320 RS 16 RW 375/2200 MW 28-1 0 403 245 013 0 403 245 014 - Sales model 'supersedes 2.80 company Daimler Benz

engine OM 617 A

Take note of important instructions on the reverse before starting test!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,10-2,20

mm (from BDC)

21mm Control rod travel

Without ADA

(2.05-2.25)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1000	13,5+0,	5,15 - 5,25	0,25(0,3)			
375	5,2-5,	3 0,6 - 0,7	0,10(0,15)		
1600			0,25(0,3)			
2180			0,25(0,3)			

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

without ADA

Lower rated sp	eed		Upper rated spe	eed		Variations in control rod travel			
Degree of deflection	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed		Rotational speed	Control rod travel	
of control lever	mm	rev/min	lever	mm	revimin	1	revimin	mm i	
1	2	3	4	5	6	7	8	¹ 9	
27-31	min.11 max.11 5,2-5,3	100 320 375	69 (8)	12,1-12	,3 2180 2300-2320		4.000	20,5-21,5	
3	**	-			2620-2720		1000 Switching po	13,1-13,3 13,5-13,6	
(5)	-	-	(1)	0,0-1,0	2950	(6)	260-310	0(240-330)	

C. Settings for Fuel Injection Pump with Governor Mounted

without ADA

Full-load d	mp 40°C (104°F)	Full-load speed 8a regulation	Variations delivery	in fuel (17)	idle	uel delivery	Difference	:
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	cm ³ /1900 strokes 8	,
2180	50,0-52,0	230G-2320* (2290-2330)	1600	51,5-53,0 (50,5-54,5)	100	min. 55,0	6,0	22
•	(10,000,00,00		1000	51,5-52,5 (50,5-53,5)	375 2550	6,0 - 7,0 (5,5 - 9,5)	1,0 (1,5) 2,5	13)
					2950	24,0-30,0 (23,0-31,0)	40.00	16)

Checking values in brackets

* 1 mm less control rod travel than in Column 2

Testing	with ALDA		MB 3.0 n				
Point	min ⁻¹	cm ³ /1000 H	RW	Pressure (absolute)			
18	1000	51,5 - 52,5 (50,5 - 53,5)	13,5 - 13,6	1733 mbar(1300 mmHg)			
18a	*** 1000	41,0 - 43,0 (40,0 - 44,0)	•	1067 mbar(800 mmHg)			
19	2180	50,0 - 52,0 (49,0 - 53,0)	12,1 - 12,3	1733 mbar (1300 mmHg)			
12a	100	min. 55	20,5 - 21,5	1733 mbar (1300 mmHg)			
15	375	6.0 - 7.0 (5.5 - 9.5)	5,2 - 5,3	987 mbar (740 mmHg)			

1. Adjusting the idle

Test supersedes Section 4.1 of test instructions VDT-W-420/300 Suppl. 2, Ed. 2.

Set the control lever to an angle of 69° . Operate the fuel-injection pump at 1000 min⁻¹.

Screw in the spring retainer until a control-rod travel of 13,5 - 13,6 mm is reached.

Set the control lever to an angle of 49° . Operate the fuel-injection from pump at 1000 min⁻¹. Control-rod travel 8,8 - 9,5 must be reached.

2. Adjusting the lower rated speed

Text supersedes Section 4.3 of test instructions VDT-W 420/300 Suppl. 2, Ed. 2.

Operate the fuel-injection pump at $n=800~\mathrm{min}^{-1}$. Take back the control lever until a control-rod travel of 1.0 - 1.3 mm is reached.

The resulting deflection of the control lever must be within the allowable tolerance. Fix the control lever in this position. Drive the fuel-injection pump at a speed according to Point 2 Section B of the test specification sheet. Set regulation at adjusting screw (28).

3. Adjusting the idle-speed auxiliary spring (70)

Position the idle-speed auxiliary spring in contact as the characteristic curve levels off at n=520-550 min⁻¹.

4. Adjusting the sensing lever

Place the control lever against the full-load stop. Operate the fuel-injection pump at $n=375\,\mathrm{min}^{-1}$. Adjust the sensing lever so that the control-rod travel is 0.1 (0.1 - 0.2) mm above the full-load control-rod travel at $n=1000^{-1}$.

- 5. *** Correct the quantity of fuel injected at the correction screw of the ALDA aneroid box. Max. correction ± 0.75 mm control-rod travel.
- 6. Pin projection = 16.65 ± 0.1 mm
- 7. Shutoff check: Operate the fuel-injection pump at $n=200~\text{min}^{-1}$. Force the control rod through the spring-loaded idle stop. The resulting control-rod travel must be max. 5 mm.
- 8. Test the pneumatic shutoff: Control lever in idle position.

 Operate the fuel-injection pump at n = 375 min⁻¹. At 450 mbar (338 mmHg) (vacuum) the control rod must move briskly to control-rod travel 0 mm.
- 9. Control-lever range idle full load = $38 42^{\circ}$.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3.0 t

1. Edition

PES 5 MW 55/320 RS 16

RW 375/2200 MW 28-3

supersedes

0 403 245 020

0 403 245 021 - Sales model

company Daimler-Benz engine

Take note of important instructions on the reverse

OM 617 A-USA

before starting test!

92 kW (125 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,10-2,20 (2,05-2,25)

mm (from BDC)

21 mm Control rod travel

Without ADA

Start-of-delivery adjustment and blocking

AT CHOOL AD			19 5°	after sta	rt-of-deliver	v cvlinder 1
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1000	13.5+0.	5,15-5,25	0,25(0,3)			
375	5,2-5,3	0,6-0,7	0,1 (0,15)			
1600			0,25(0,3)			
2180			0,25(0,3)			
				•		

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

without ADA

Lower rated sp	eed		Upper rated sp	eed		Variations in control rod travel			
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed	a statement of the stat	Rotational speed	Control rod travel	
lever	mm	rev/min	lever	നന	rev/min		rev/min	mm	
1	2	3	4	5	6	7	8	9	
27-31	min.11 max.11	100 320	69 🕜	12,1-1	2,3 2180	(12)	100	20,5-21,5	
(2)	5,2-5,3		8	11,0 4.0	2300-2320 2620-2720	(3)	1600 1000	13,1-13,3 13,5-13,6	
(a)	~~	-	(9)	0,0-1,		(14)			
(5)	-	-	Ũ	-	-	6	5260-311	7(240-330)	

C. Settings for Fuel Injection Pump with Governor Mounted

without ADA

Full-load d	elivery (19)	Full-load speed 8a	Variations	in fuel (17)	Starting f	uel delivery	
Test oil ten rev/min 1	np 40°C (104°F) cm³/1000 strokes 2	rev/min 3	rev/min	cm³/1000 strokes		cm ³ /1 000 strokes	Difference cm ³ /1000 strokes 8
2180		2300-2320* (2290-2330)	1600 1000	(50,5-54,5)	100 375 2550	min. 55,0 6,0-7,0 (5,5-9,5) 24,0-30,0 (23,0-31,0)	6,0 1,0 (1,5) 2,5 (3,0) (6

Checking values in brackets

* 1 mm less control rod travel than in Column 2

2.83

G6

Testing	with ALDA	•		MB 3.0 n
Point	min ⁻¹	cm ³ /1000 H	RW	Pressure (absolute)
18	1000	51,5 - 52,5 (50,5 - 53,5)	13,5 - 13,6	1733 mbar(1300 mmHg)
18a	*** 1000	41,0 - 43,0 (40,0 - 44,0)	-	1067 mbar(800 mmHg)
19	2180	50,0 - 52,0 (49,0 - 53,0)	12,1 - 12,3	1733 mbar (1300 mmHg)
12a	100	min. 55	20,5 - 21,5	1733 mbar (1300 mmHg)
15	375	6.0 - 7.0 (5.5 - 9.5)	5,2 - 5,3	987 mbar (740 mmHg)

1. Adjusting the idle

Test supersedes Section 4.1 of test instructions VDT-W-420/300 Suppl. 2, Ed. 2.

Set the control lever to an angle of 69° . Operate the fuel-injection pump at 1000 min⁻¹.

Screw in the spring retainer until a control-rod travel of 13,5 - 13,6 mm is reached.

Set the control lever to an angle of 49° . Operate the fuel-injection pump at 1000 min⁻¹. Control-rod travel 8,8 - 9,5 must be reached.

2. Adjusting the lower rated speed

Text supersedes Section 4.3 of test instructions VDT-W 420/300 Suppl. 2, Ed. 2.

Operate the fuel-injection pump at $n=800~\mathrm{min}^{-1}$. Take back the control lever until a control-rod travel of 1.0 - 1.3 mm is reached.

The resulting deflection of the control lever must be within the allowable tolerance. Fix the control lever in this position. Drive the fuel-injection pump at a speed according to Point 2 Section B of the test specification sheet. Set regulation at adjusting screw (28).

3. Adjusting the idle-speed auxiliary spring (70)

Position the idle-speed auxiliary spring in contact as the characteristic curve levels off at $n=520-550 \text{ min}^{-1}$.

4. Adjusting the sensing lever

Place the control lever against the full-load stop. Operate the fuel-injection pump at $n=375\,\mathrm{min}^{-1}$. Adjust the sensing lever so that the control-rod travel is 0.1 (0.1 - 0.2) mm above the full-load control-rod travel at $n=1000^{-1}$.

- 5. *** Correct the quantity of fuel injected at the correction screw of the ALDA aneroid box. Max. correction ± 0.75 mm control-rdd travel.
- 6. Pin projection = 16.65 ± 0.1 mm
- 7. Shutoff check: Operate the fuel-injection pump at n = 200 min⁻¹. Force the control rod through the spring-loaded idle stop. The resulting control-rod travel must be max. 5 mm.
- 8. Test the pneumatic shutoff: Control lever in idle position.

 Operate the fuel-injection pump at n = 375 min⁻¹. At 450 mbar

 (338 mmHg) (vacuum) the control rod must move briskly to control-rod travel 0 mm.
- 9. Control-lever range idle full load = $38 42^{\circ}$.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,0 t 1 1. Edition

PES 5 MW 55/320 RS 16

RW 375/2200 MW 29-1

supersedes.

company Daim1er-Benz engine: OM 617A-USA

92 kW (125 PS)

0 403 245 022

0 403 245 023 - Sales model

A. Fuel Injection Pump Settings

Take note of important instructions on the reverse

before starting test!
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Start-of-delivery adjustment and blocking 19.5° after start-of-delivery cylinder 1.

Port closing at prestroke

2,10-2,20 (2,05-2,25)

mm (from BDC)

21 mm

Control rod travel

Without ADA

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3 ,	4	2	3	6
1000	13,5+0	,1 5,15-5,25	0,25(0,3)			
375 1600 2180	5,2-5,3	0,6-0,7	0,1 (0,15 0,25(0,3) 0,25(0,3)			
1600	3,23,0	3,0 0,.	0.25(0.3)			

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

without ADA

Lower rated sp	eed		Upper rate	ed spe	eed		Variations in control rod travel			
Degree of deflection of control		Rotational speed	Degree of deflection of control	:	Control rod travel	Rotational speed		Rotational speed	Control rod travel	
lever	mm	rev/min	lever		mm	rev/min		LEA1WILL	mm	
1	2	3	4		5	6	7	8	9	
27-31 ① ② ③ ④ ⑤	**	100 320 375	69	700000	12,1-12 11,0 4,0 0,0-1,	2300-2320 2620-2720	1	Switching p	min. 55 13,1-13,3 13,5-13,6 ont 40-330)	

C. Settings for Fuel Injection Pump with Governor Mounted

without ADA

Full-load de	elivery (19) np. 40°C (104°F)	Full-load speed (8a) regulation	Variations delivery	in fuel (17)	Starting fille	uel delivery	Difference	;
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strakes 5	rev/min 6	cm ³ /1000 strokes 7	cm ³ /1000 strokes 8	
2180	50,0-52,0 (49,0-53,0)	2300-2320* (2290-2330)	1600	51,5-53,0 (50,5-54,5) 51,5-52,5 (50,5-53,5)	100 375 2550	min. 55,0 6,0-7,0 (5,5-9,5) 24,0-30,0 (23,0-31,0)	(1,5)	2a) 15) 16)

Checking values in brackets

* 1 mm less control rod travel than in Column 2

Testing	with ALDA			MB 3.0 n
Point	min ⁻¹	cm ³ /1000 H	RW	Pressure (absolute)
18	1000	51,5 - 52,5 (50,5 - 53,5)	13,5 - 13,6	1733 mbar(1300 mmHg)
18a	*** 1000	41,0 - 43,0 (40,0 - 44,0)	-	1067 mbar(800 mmHg)
19	2180	50,0 - 52,0 (49,0 - 53,0)	12,1 - 12,3	1733 mbar (1300 mmHg)
12a	100	min. 55	20,5 - 21,5	1733 mbar (1300 mmHg)
15	375	6.0 - 7.0 (5.5 - 9.5)	5,2 - 5,3	987 mbar (740 mmHg)

1. Adjusting the idle

Test supersedes Section 4.1 of test instructions VDT-W-420/300 Suppl. 2, Ed. 2.

Set the control lever to an angle of 69° . Operate the fuel-injection pump at 1000 min⁻¹.

Screw in the spring retainer until a control-rod travel of 13,5 - 13,6 mm is reached.

Set the control lever to an angle of 49° . Operate the fuel-injection pump at 1000 min⁻¹. Control-rod travel 8,8 - 9,5 must be reached.

2. Adjusting the lower rated speed

Text supersedes Section 4.3 of test instructions VDT-W 420/300 Suppl. 2, Ed. 2.

Operate the fuel-injection pump at $n = 800 \text{ min}^{-1}$. Take back the control lever until a control-rod travel of 1.0 - 1.3 mm is reached.

The resulting deflection of the control lever must be within the allowable tolerance. Fix the control lever in this position. Drive the fuel-injection pump at a speed according to Point 2 Section B of the test specification sheet. Set regulation at adjusting screw (28).

- 3. Adjusting the idle-speed auxiliary spring (70)
- Position the idle-speed auxiliary spring in contact as the characteristic curve levels off at n=520-550 min⁻¹.
- 4. Adjusting the sensing lever

Place the control lever against the full-load stop. Operate the fuel-injection pump at $n=375\,\mathrm{min}^{-1}$. Adjust the sensing lever so that the control-rod travel is 0.1 (0.1 - 0.2) mm above the full-load control-rod travel at $n=1000^{-1}$.

- 5. *** Correct the quantity of fuel injected at the correction screw of the ALDA aneroid box. Max. correction ± 0.75 mm control-rod travel.
- 6. Pin projection = $16.65 \pm 0.1 \text{ mm}$
- 7. Shutoff check: Operate the fuel-injection pump at $n=200~{\rm min}^{-1}$. Force the control rod through the spring-loaded idle stop. The resulting control-rod travel must be max. 5 mm.
- 8. Test the pneumatic shutoff: Control lever in idle position.

 Operate the fuel-injection pump at n = 375 min⁻¹. At 450 mbar

 (338 mmHg) (vacuum) the control rod must move briskly to control-rod travel 0 mm.
- 9. Control-lever range idle full load = $38 42^{\circ}$.

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 PEN 10.0 b

5. Edition

PE 6 P 100 A 320 RS 101 Z

Port closing at prestroke

estoil-ISO 4113

RSV 200-900 P 4/305 R / 320 RS 101 (2)

supersede4.81 company Volvo-Penta TMD 100 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,55-2,75)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery 1 cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery 2 cm ³ /100 strokes 3	Spring pre-tensioning (torque-control vaive) mm 6
700	13,5 ⁺⁰ ,1	15,6 - 15,8	0,3(0,6)	12,7+0,1	14,5 - 14,7	880
200	5,9-6,1	1,0 - 1,4	0,2(0,4)	5,5-5,7	1,1 - 1,5	200 2,5 [±] 0,1 ** (max.2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in the case of greater dispersion after the delivery-valve spring pre-tension accordingly. Settings

RSV..3U5 K

(Z)

										•
1 Uppe	r rated speed i Control rod		Interme	Intermediate rated speed			Lower	rated speed	(3) To	rque control
Degree of deflection	travel	travel				Control- lever		Control rod travel		Control rod travel
of control lever	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 22	200	5,5	880	13,5+0,1
	x =	4,75					100 200	min. 20, 5,9-6,1	340 240	13,5+0,3 14,7+0,9
ca. 56	940-950						255-31			
23	990-102 1100= 0								,	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	Rotational- speed limitat	Ga Fuel delivery characteristics		Starting f	uel delivery 5	4a) idi	lle stop	
rest oil te rev/min t	emp 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min 8	Control root travel mm	
700	156,0 - 158,0 (154,0 - 160,0)	940-950*			100 200	20 - 21 220 - 250 11 - 15**			

Checking values in brackets

* 1 mm less control rod travel than col. 2

RSV..305R ohne Z

B. Governor Settings

	r rated speed Control rod travel mm		Interme	Intermediate rated speed				rated speed Control rod travel mm	3 To	rque control Control rod travel
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
loose	800	0,3-1,0		-		ca. 22	200	5,1		
	x = 4	•75					100	min. 20,0		
ca. 55		0 = 11,7 20= 4,0 3-1,7					200 260-310	5,5-5,7 = 2,0		

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	6 Rotational- speed limitat.		rel delivery aracteristics	Starting I	uel delivery 5	da idle stop	
rev/min	cm3/1000 strokes 2	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min 8	travel mm 9
880	145,0 - 147,0 (143,0 - 149,0)	940-950*				220 -250 = 20,0 - 21,0 mm RW		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	1	Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1) ,

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travei)

^{* 1} mm less control rod travel than col. 2

40

WPP 001/4 MTU 47,5 a

3. Edition

PE 12 ZWM 160/120 RS 2002

RQUV 300-1050 ZWA 65 R

Replaces Firm: 3.82

MTU Engine 12 V 396-03 1440 kW

1-2-9-4-5-8-11-2-3-10-7-60-45-60-105-120-165-180-225-240-285-300-345 ° $^+0,5$ °($^+0,75$ °)

T440 KM

All test specifications apply only to Bosch fuel-injection pump test benches and equipment. -Nr. 0 406 030 002

A. Fuel-injection-pump settings Cylinder 12 - control rod in center position

Port closing at	prestroke /	2,5-2,6	mm (from BDC)		
Rotational	Control-	2 45 2 65) Puel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve
min-1	mm	cm³/1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
1000 1000 300	9,0-9,1	622,0-636,0 220,0-248,0 104,0-128,0	20,0 (30,0) 28,0 (42,0) 16,0 (24,0)	619,0-639,0 215,0-253,0 99,0-133,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	pper rated speed Medium rated spee				ed	Lower rat	ed spee	d	Torqu	e control
Control lever deflection degrees	mm min-1 2	Control- rod 1 mayal 1 mm 3	Control lever flection degrees 4	min-1 5	Control- rod travel mm 6	Control lever de- flection degrees 7	min - 1 8	Control- rod travel mm •	min1 10	Control- rod travel mm 11
ca. 82	1050	18,0	ca. 27	375	8,0	ca. 21	300	8,0	-	-
	-	1055-1075 1150-1210 0 - 2,0	æ	200 300 500 590-	14,3-17,2 10,3-11,8 1,9-3,7 720 = 0		200 400 485-	10,8-14,2 3,9-5,0 590 = 0		

Torque control travel dimension a =

mm

C. Settings for fuel-injection pump with fitted governor

on gove	end delivery emor control lever el temperature 40°)	Control rod stop at speed	Fuel-de charac	livery teristics	Startin deliver	
min ⁻¹	cm ³ /1000 strokes 2	min-1 3	min-i 4	cm ³ /1000 strokes 5	min-1 6	cm ³ /1000 strokes 7
Not	known Carry	out adjustment on en	ine.	·		'
	Kilomir carry	spe adjustinent on an	1	1		
	Known. Carry					

Checking values in brackets

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 23,7 a

1. Edition

PE 6 ZWM 160/120 RS 2004 RQUV 300-1050 ZWA 65 R Komb.-Nr. 0 406 036 034 1- 2- 3 - 4 - 5 - 6 Replaces
Firm: MTU
Engine: 396-03
720 kW

0-45-120-165-240-325 ° + 0,50 (+ 0,75 °)

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Control-			Fuel delivery	Spring pre-tension (torque-control	
rod travel	Average value	in fuel delivery	Checking values	valve)	
mm	cm ³ /1000 strokes	cm³/1000 strokes	cm ³ /1000 strokes		
2	3	4	5		
18,0+0,1 9,0-9,1 9,0-9,1	622,0-636,0 220,0-248,0 104,0-128,0	20,0 (30,0) 28,0 (42,0) 16,0 (24,0)	619,0-639,0 215,0-253,0 99,0-133,0		
	mm 2 18,0+0,1 9,0-9,1	mm cm ³ /1000 strokes 2 3 18,0+0,1 622,0-636,0 9,0-9,1 220,0-248,0	mm cm ³ /1000 strokes cm ³ /1000 strokes 4 18,0+0,1 622,0-636,0 20,0 (30,0) 9,0-9,1 220,0-248,0 28,0 (42,0)	mm cm ³ /1000 strokes cm ³ /1000 strokes cm ³ /1000 strokes 5 18,0+0,1 622,0-636,0 20,0 (30,0) 619,0-639,0 9,0-9,1 220,0-248,0 28,0 (42,0) 215,0-253,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees 1	mm	Control- fffn -1 travel mm 3	Medium ra Control lever flection degrees 4		ed Control- rod travel mm 6	Lower rat Control lever de- flection degrees 7	ed speed min-1 8	Control- rod travel mm 9	Torqu min-1	e control Control- rod travel mm 11
ca. 82	1050	18,0	ca. 27	375	8,0	ca. 21	300	8,0	-	-
		1055-1075 1150-1210 0 - 2,0		200 300 500 590-7	14,3-17,2 10,3-11,8 1,9-3,7 20 = 0		200 400 485-	10,8-14,2 3,9-5,0 90 = 0		

Torque control travel dimension a =

mm

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control rod stop at speed	Fuel-de charact		Starting deliver	
min-1	cm ³ /1000 strokes 2	min~1 3	min-1 4	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7
Not	known. Carry o	ut adjustment on eng	ine.			
	·					

Checking values in brackets

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 HAN 10,8 a 1

7. Edition

Festoil-ISO 4113 PE 6 A 95 D 320 RS 2364 ** Test cold-start device according to VDT-I-DAF 002, page 2!

EP/RSV 350-1100 A8 B1070R A8 B1127R supersede8.82 company MF-Hanomag engine D 963 A1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery 2364 cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery 2557 cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,5	13,5 - 13,8	0,3 (0,6)	13,2	12,4-12,5	n 1100
350 500	+0,1 6,7-6,9 	1,4- 2,0 C, 4-5	0,3 (0,5) 0,4 (0,7)	l	1,4- 2,0	n 350

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

1 Uppe	rated speed	rev/min	Intermed	tiate rated	speed	4		rated speed	(3) fo	rque control
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel
of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.24	350	5.5	480	13,5-13,6
	χ =	5,5			/		100 350	min. 19 5,9-6,1	400	13,8-14,2
ca.57	12,5	1140-1150			1		435-495	2,0	400	17,0-14,2
2a	4,0 1380	1205-1235 0,3 - 1,7		/			600	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

il-load stop	6 Rotational- speed limitat	(3a) Ft.	iel delivery paracteristics	Starting f	fuel delivery 5	4a Idle stop	
emp 40°C (104°F) cm³/1000 strokes	Note: changed to) rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Cantrol rod travel mm
2	3	4	5	6	7	8	9
134,0 - 136,0 (132,0 - 138,0	1140-1150*	500	131,0 - 134,0 (129,0 - 136,0)	100	20-20,5 mm RW **		
,							
	cm ³ /1000 strokes 2	mp 40°C (104°F) cm³/1000 strokes 2 134,0 - 136,0 1140-1150*	mp 40°C (104°F) cm ³ /1000 strokes 2 134,0 - 136,0 1140-1150 * 500	speed limitat Note: change 1 to) rev/min 2 cm³/1000 strokes 2 rev/min 3 characteristics change 1 to) rev/min 2 cm³/1000 strokes 5	speed limital Characteristics light characteristics characteri	mp 40°C (104°F) Cm ³ /1000 strokes Cm ³ /1000 s	speed limital Note: Characteristics Idle C

Checking values in brackets

* 1 mm less control rod travel than col 2

4.83

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50. 0-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Féderale d'Allemagne par Robert Bosch GmbH.

B. Governor Settings

Degree of deflection	travel	rev/min Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection in degrees 7	rev/min	rated speed Control rod travel mm	(3)	que control Control rod travel mm
100se ca.50	800 x = 12,2 = 4,0 =	0,3-1,0 5,5 1140-1150 1220-1250				ca.19	350 100 350 470-53	62 min. 19,5 6,6-6,8 0 = 2,0		13,2-13,3 13,2-13,4 13,5-13,9

C. Settings for Fuel Injection Pump with Fitted Governor

(3)	il-lead stop	6 Rotational- speed limitat.	(3a) Fu	el delivery aracteristics	Starting fi	uel delivery 5	4a Idle stop	
1	mp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes		travel mm 9
1100	124,0 - 125,0 (122,0 - 127,0)	1140-1150*		121, 0- 124,0 (119, 0- 126,0)	100	20-20,5 mm RW**	G	

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interm	ediate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	rque control Control rod travel mm
		<u> </u>	1						
		•	4						
23									

C. Settings for Fuel Injection Pump with Fitted Governor

	it-load stop	6 Rotational- speed limitest.		et delivery aracteristics	Starting f	Starting fuel delivery 5 4a Idle stop			
Test oil te rev/min	cm ³ /1000 strokes	Note: changed to) rev/min	rev/min 4	cm ³ /1000 strokes	rev/min	cm³/1000 strokes 7		tra vel mm 9	
			ŀ						

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Test Specifications 2 Fuel Injection Pumps 2 WPP 001/4 MB 11,8 e

and Governors

1 - 5 - 3 - 6 -, 2 - 4 je 60°

6. Edition

PE 6 P 100 A 720 RS 15

RQ 250/1100 PA 269 R PA 278 R * supersedes 1Q.82

Daimler-Benz

Komb.-Nr. 0 401 846 329

* 278 R - Functional check of roll-start block: Adjust solenoid until control rod is 1,5...2,5 mm from stop.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(2,75-2,75)
Port closing at prestroke
2,80-2,90

Testoil-ISO 4113

mm (from BD@ RW 9,0 - 12,0 mm.

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,0+0,1	11,8 - 12,0	0,3(0,6)			4
250	7,4-7,6	1,70 - 2,30	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che			Control Control			Control Control rod			cifications (5)	Torque control Control rod		
	travel		ned travel mm 4	red travel	rev/min 6	rev/min	red travel mm 8	rev/min	trav ol mm 10		travel mm 12	
600	15,6-16,4	600	16,0	12,Q 4,0	1125-1145 1195-1230	į	6,0	100 250	min.7,5 5,9-6,1			
1350	0 - 1			7,0	1130 1230				425 =2,0			

Torque control travel on flyweight assembly dimension a =

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min 1	cm ³ /~1000 strokes 2	rev/min 3	rev/mm 4	cm ³ /-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes:/ mm 7	
1100	118,5-120,5 (116,5-122;5)	450	450	101,0 - 105,0 (99,0 - 107,0)	100	140-160	

Checking values in brackets

31.83

G18

BOSCH Geschaftsl

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 6.2 m 5. Edition

PE 6 A 85 D 320 RS 2546

RSV 250-750 A 7 B 2125 R

Komb.-Nr. 0 400 676 168

supersede9.82 company DAF engine: DD 575 DF

Specifications apply to test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Jesters, 0°.

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

RW = 9 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
750	12,1+0,1	6,0 - 6,2	0,3(0,45			
250	8,4-8,6	0,8-1,4	0,2(0,4)			
				I		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	effection travel			rated spe rev/min 5	Control rod travel mm	Degree of deflection of control lever rev/min mm 4 Lower rated speed Control rod travel rev/min mm 9			3 Tor rev/min 10	que control Control rod travel mm 11
loose	800 x =	0,3 - 1,0 4,5	-	•	•	ca. 16	250	8,5	750 700	12,1+0, 12,1+0,
§3.40	11,1 4,0 955	770-780 795-815 0-3-1-7			.		250 260-	** 20=2,0mm		

Set idle-speed auxiliary spring at 2,0 mm control-rod travel, ** then 1/2 turn back.
The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to:	ad stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting idle	fuel delivery	(5a) Idle stop	
Test oil temp rev/min 1	c. 40°C (104°F) cm³/1000 strokes	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes	revimin	cm ³ /1000 strokes	rev/min 8	Control rod travel mm 9
750	60,5 - 62,5 (58,5 - 64,5)	770-780*	-	-	100	19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

①

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 7,0 a 1
1. Edition

PE 6 P 100/320 RS 169 Z
(A)

RQV 200-1200 PA 122/2 R ROV 250-1200 PA 235/2 R supersedes company 01v0 engine: TD 70

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke (2 75-2 95)	mm (from BDC)		
Rotational speed rev/min	,	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve) mm
1000	12,0	10,4-11,1	0,5			2,5 + 0,1
600 600 600 200	9,0 12,0 15,0 9,0	3,3-4,3 9,8-11,2 14,9-16,5 2,3-3,3				(max.2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

..PA 122/2 R

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Stidings	ieeve travel
deflection of control	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
iever	mm	rev/min (2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1290 1550 1200 1300	15,0-18,0 0 15,0-17,8 7,7-12,6		-	-	ca.23	300 400 500	8,6-10,0 6,4-8,8 2,9-5,4 0,7-2,7	1290	8,3
	1400 1500	0 - 7,6				3a	590	0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2b) limitation intermediate speed	mediate speed		Starting Idle switchin	. •	Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA	0,7 bar .	1230-1240*	LDA	0 bar	100	150,0-180,0	-	-
700	70,0-72,0 (69,0-73,0)		700	59,5-62,5 (58,5-63,5).	200	11,0-15,0		
				,	Dispe	rsion max. 2,5		
						ı		

Checking values in brackets

*1 mm less control rod travel than cot. 2 4.83

Upper rated s	peed		Intermediat	e rated spe	ed	Lower rated	speed	1	Sliding s	eeve travel
deflection	rev/min Control rod travel mm	mm	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm 11
ca. 50 ca. 45	1290 1560 1200 1300 1400 1510	15,0-18, 0 15,0-18, 8,1-13, 0 - 7,4	2	-	-	ca. 13	100 200 300 380 510	8,9-11,0 7,0-10,0 3,8-6,8 0 - 4,0		8,3

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

	1 stop np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed (4a)	Fuel deliv character high idle s	istics	idle switchir	fuel delivery 6	Torque- travel	Control rod travel
rev/min 1	cm ³ /1000 strokes 2	rev/min	4	5	6	7	8	9
LDA 700	0,7 bar 70,0-72,0 (69,0-73,0)	1230-1240*	LDA 700	0 bar 59,5-62,5 (58,5-63,5)	100 200	150,0-180,0 11,0-15,0	-	
					Pispei	sion max. 2,5		

Checking values in brackets

* 1 mm less control rod travel than col: 2

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm
PE 6 PPS 169 Z + RQVPA 122/2 R	0,11-0,14		
bzw.	•	0,05-0,11	
+ RQVPA 235/2 R			

Test Specifications Fuel Injection Pumps 1, Edition and Governors

PE 6 P 100/320 RS 169 Y

Testoil-ISO 4113

RQV 200-1200 PA 122/2 R RQV 250-1200 PA 235/2 R company 01v0 engine: TD 70

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,8-2,9 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,0	10,4-11,1	0,5			2,5 ⁺ 0,1 (max. 2,2-2,9)
600 600 600 200	9,0 12,0 15,0 9,0	3,3-4,3 9,8-11,2 14,9-16,5 2,3-3,3				(max. 2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

.. PA 122/2 R

Upper rated s	Peed		Intermediate	rated sp	eed	Lower rated	speed		Stidina s	leeve travel
Degree of deflection of control	rev/min Control . rod travel	Control rod ta	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm	rev/min (2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1290 1550	15,0-18,0 0	-	-	-	ca. 23	300	8,6-10,0 6,4-8,8	1290	8,3
ca. 66	1200	15,0-17,8 7,7-12,6					400 500	2,9-5,4 0,7-2,7		
	1400 1500	0 - 7,6				<u>3</u> a	590	U		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed	high idle speed (S)		Starting idle switching		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/mm	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA	0,7 bar	1230-1240*	LDA	0 bar	100	150,0-180,0	-	-
700	100,0-102,0 (99,0-103,0)		700	67,5-70,5 (66,5-71,5)	200	11,0-15,0		
				· D	isper	sion max. 2,5		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Upper rated s	speed		Intermediate	rated spe	ed	Lower rated	speed	l .	Sliding sleeve trave	
deflection	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	(1) mm 11
ca. 50	1290 1560 1200 1300 1400 1510	15,0-18,4 0 15,0-18,2 8,1-13,2 0 - 7,4	-	_	7	ca.13	100 200 300 380 510	8,9-11,0 7,0-10,0 3,8-6,8 0 - 4,0 0		8,3

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil tem		Rotational-speed (2b) limitation intermediate speed	character high ide s	istics	Starting lidle switching	fuel delivery 6	Torque- travel	Control od
rev/min	cm³/1000 strokes	164)	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ² /1000 strokes 7	rev/min 8	mm 9
LDA	0,7 bar	1230-1240 *	LDA	0 bar	100	150,0-180,0	-	
700	100,0-102,0 (99,0-103,0)		700	67,5-70,5 (66,5-71,5) Di	200 spers	11,0-15,0 on max. 2,5		

Checking values in brackets

* 1 mm less control rod travel than co: 2

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm
PE 6 P RS 169 Y + RQV PA 122/2 R	0,37-0,40		
bzw.		0,12-0,18	
RQVPA 235/2 R			

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 11,0 q

2. Edition

En

PE 6 P 120 A 320 LS 3815

RSV 650-1150 P1/820R

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes 10.82

company: Daimler-Benz

engine: OM 421 A

206 kW (280 PS)

Komb.-Nr. 0 401 876 722

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke	(2)05-415)	mm (from BDC)			
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
2	3	4	2	3	6
12,0+0,1	18,4 - 18,6	0,5(0,9)			_
3,5-3,7	1,8 - 2,4	0,8(1,2)			
	Control rod travel mm 2 12,0+0,1	Control rod travel mm cm³/100 strokes 2 3 12,0+0,1 18,4 - 18,6	Control rod travel mm cm³/100 strokes 2 2,0+0,1 18,4 - 18,6 0,5(0,9)	Control rod travel Control rod travel	Control rod travel Control rod travel

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lower	rated spe	ed	3 Tor	que control
Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		Control rod travel
	rev/min	mm	lever	rev/min	mm	lever	rev/min	LUU.	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
1oose	800	0,3-1,0	-	•	•	ca.30	650	4,2	-	-
	. X =	3,0					630	4,1-4,3		
§a.54	11,0 4,0 1300	1160-1170 1185-1215 0.3-1.7					655~	715 = 2,0 **		

** Set auxiliary idle spring at 2.0 mm control-rod travel.

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	ad stop	6 Rotational- speed limitat.			Starting Idle	fuel delivery	Sa) Idie	stop
Test oil temp rev/min 1		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1130	184,0-186,0 (181,0-189,0		-	-	100	190,0-210,	0	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 FIA 13,8 a 6 1. Edition

En

PE 6 P 120 A 720 RS 167

RQ 225/1100 PA 323 R

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes ·

company: Fiat

engine: 221 A

Komb.-Nr. 0 401 846 356

All test specifications are yalid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1

(1,95-2,15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery cm³/100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve)
1100	11,1+0,1	17,0-17,3	0,5(0,8)	2	3	6
225	7,5-7,7		0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider rck Control rod	Full-load s Setting po		-	cifications (4	Idle spe	ed regula point Cantrel		cifications 5	Torque	Control rod
rev/min 1	travel	rev/min 3	red travel mm 4	red travel mm 5	rev/min 6	rev/min 7	red travel mm 8	rev/min 9	travel mm 10	rev/min 11	travel mm 12
550	15,6-16,4	550	16,0	10,1 4,0 1350	1145-116 1190-122 0-1,0		7,6		min.9,1 7,5-7,7 105 = 2,0	1100 550	11,1-11,2 11,1-11,3

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1145-1160 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor o Test oil ten		Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /~1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:// mm 7	
1100	170,0-173,0 (167,0-176,0)	•	-	-	100	19,5-21,0 mm RW	

Checking values in brackets

3.83

BOSCH

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 13,8 a 1

4. Edition

PE 6 P 120 A 720 RS 167

RQV 225-1100 PA 177 R

supersedes companyFiat

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

engine: Komb.-Nr. 0 401 846 245

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(1'95-2'15)	mm (from BDC)			
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1100	11,1+0,1	17,0-17,3	0,5 (0,9			
225	7,5-7,6	1,7-2,3	0,8 (1,2)			
					·	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

	rev/min	Control rod	ြ	Degree of deflection travel			Lower rated speed Degree of deflection Control rod travel			Sliding sleeva travel	
of control	rod travel			of control	rev/min	mm (4)	of control lever 7	rev/min 8	mm 3 9	rev/min 10	mm 11
max.	1100	15,2-17	,8	-	-	-	ca.10	100 225	min.7,5 5,9-6,1	200 500	0,6-0,9 2,7-3,0
ca.60	10,1 4,0 1350	1140-11 1200-12 0-1,	30					•	410 = 2,0	800 1100	4,7-4,9 7,9
							3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten	1 stog	Rotational-speed (20) Fuel de irritation stermediate speed		ery characteristics (5a) peed (5b)	Starting idle switching		Torque-	Control Control rod	
rev/min cfh³/1000 strokes		rev/min 4e	rev/min	cm ³ /1000 strokes	_	cm ³ /1000 strokes	rev/min 8		
1	2	3	4	5	8	/	-		
1100	170,0-173,0 (167,0-175,0		-	-	100	19,0-21,0 mm RW	•	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.83

BOSCH

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 DEE 7,6 b

1. Edition

En

PES 6 A 100 D 410 RS 3034

RSV 600-1100 A 2 B 2080 L

supersed€s

company engine

John Deere 6.466 AZ-01

Komb.-Nr. 0 401 276 049

Testoil-ISO 4113

152 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1,95-2,05 Port closing at prestroke

mm (from BDC)

		90-2,10)		Carrieri cod	Fuel delivery	Spring pre-tensioning
Rotational	00	Fuel delivery	Difference	Control rod travel	rue delivery	(torque-control valve)
speed	travel	cm³/100 strokes	cm ³ / 100 strokes	rr.m	cm ³ /100 strokes	mm
rev/min	mm (2)	3	4	2	3	6
1100	12,2+0,1	13,5-13,7	0,3			
1100	12,2.03.		1			
600	4,8-5,0	1,3-1,7	0,3			
	į					
						<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel mm		Intermed	nate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3)	rque control Control rod travel mm
loose	800	0,3-1,0	-	*	-	ca. 19	100	4,4 min. 19,0 4,8-5,0	-	•••
ca. 37	11,2 4,0 1250	1145-1155 1195-1225 0,3-1,7					620 - 680 800	= 2,0 max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(20)	H-load stop	Rotational-speed limitat 3a Fuel delivery characteristics			Starting fi	uel delivery 5	Control rod		
Test oil te	cm ² /1000 strokes	Note: changed to .) rev/min 3	rev/min	cm3/1000 strokes 5	rev/mm	cm³/1000 strokes 7	rev/min 8	travel mm 9	
LDA 1100	0,7 bar 134,5-136,5 (133,0-138,0)	1145-1155*	LDA 500	0 bar- 68,5-71,5 (67,0-73,0)	100	170,0-195 = 19,0- 21,0 mm R		0 4,9	

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500 rev/min decreasing pressure - in bar gauge pressure

DEE 7,6 b

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 ARS 3034 +RSVA 2 B 2080L		0,13	2,65-2,75 0,7-1,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

VDT-WPP 001/4 MAC 11.0 s

1. Edition

PES 6 P 110 A 720/3 RS 356 Komb.-Nr. 0 402 036 036

RO 300/900 PA 396 R $PLE-Ma\beta = 0.740" - 0.820"$ supersedes company engine

MACK ET 673 A

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port clesing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	12,3+0,1	16,7 - 16,9	0,4			
300	6,0 6,2	0,7 - 1,7	0,4			
-						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin		Full-load s Setting po	•	-	cifications	(4)	Setting poir		Idle speed regulation Setting point Test specifications 5					
rev/min	Control rod travel mm	rev/min 3	Control red travel mm 4	Control red travel mm 5	r ev /min 6	`	rev/min 7	Control rod travel rnrn 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm		
950	10,8-14,1	950	12,5	1000 1050 1070		,8 1,0	300	5,5	100 300 400 900 950 980	9,8-11,2 5,4-5,7 1,4-2,0 1,4-2,0 0 - 1,4	-	-		

Torque-control travel

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of governor of Test oil ter	lelivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics (3b)	Starting for Idle spee	uel delivery d Control
rev/min	cm ³ /-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:// mm
900	167,0-169,0	-	600	163,5 - 166,5	100	110,0-170,0
			300	PLE 108,0 - 116,0	High 995	idle speed 34,0 - 37,0

Checking values in brackets

3.83

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps 1 and Governors

 $VDT-WPP 001/4 MAC 11,0 \times 7$

1. Edition

US-PES 6 P 110 A 720 RS 6006 Komb.-Nr. 9 400 231 153

US-ROV 300/600-1050 PA 593-1K $PLE-Ma\beta = 0.740" - 0.820"$

supersedes

MACK

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

EM 6 - 225 225 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Oifference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	10,5+0,1	16,1 - 16,3	0,4			
300	5,2-5,4	2,1 - 3,1	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection	rev/min Control rod travel mm	Control rod travel mm rev/min (28	of control	rated sports rav/min	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Silding s rev/min 10	mm
max.	1120	15,2-17,8	-	-	-	ca.20	250	9,8-11,3	-	-
ca. 59		1090-1100 1165-1195 0 - 1,0				(3e)	300 400 695-	7,9-8,1 3,8-5,2 755 =2,0		

Torque controi travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed		Fuel delivery characteristics 5a high idle speed 5b		fuel delivery 6	Torque- travel	Control cod
rev/min	nin cm³/1900 strokes rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1050	161,0-163,0	1090-1100 *	850	162,5-165,5	100	120,0-180,0	1050	-
			630	180,0-183,0			950 850	10,6+0,1
ļ				PLE			750 630	
			800	150,0-158,0		Į.	500	

Checking values in brackets

1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11.0 x 2

1. Edition

US-PES 6 P 110 A 720 RS 6006 US-ROV 300/600-1050 PA 587-2K Komb.-Nr. 9 400 231 141

 $PLE-Ma\beta = 0.740" - 0.820"$

supersedes

MACK

Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

EM 6 - 237 224 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3.15-3.35)	mm (from BDC)								
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)					
rev/min 1	חתר 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6					
1000	12,3+0,1	17,6 - 17,8	0,4								
300	5,2-5,4	1.1 - 2,1	0,4								

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated sp	peed			Intermediate	rated sp	ed		Lower rated	speed			Sliding s	leeve travel
	rev/min Control	Control rod	(18)	Degree of deflection		Control re travel	od	Degree of deflection		Control r travel	od		0
	rod travel mm	mm rev/min	(28)	of control lever	rev/min	mm	4	of control lever	rev/min	mm	3	rev/ភាព	mm
1	2	3		4	5	6		7	8	9		10	11
max.	1125	15,2-17	,8	-	-	-		ca.21	250	9,5-1	1,0	-	-
ca.61	11,3 4,0 1230	1090-11 1170-12 0 - 1	200					(3e)	300 400 700-	7,9-8 3,8-5 760= 2	,2		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr		Rotational-speed 2b im:tation intermediate speed	Fuel deliv	ery characteristics 5a	Starting idle switchir	•	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	tev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	175,5-177,5	1090-1100 *	800 600	180,5-183,5	100	110,0-170,0	1000 800	12,7+0,1
			860	PLE 103,0-111,0			700 600 500	

Checking values in brackets

* 1 mm less control rod travel then col 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 j

1. Edition

US-PES 6 P 110 A 720 RS 6009-1 US-RQV 300/600-1050 PA 543-1K supersedes $PLE-Ma\beta = 0,740" - 0,820"$ Komb.-Nr. 9 400 231 143

MACK E 6 - 250

Note VDT-I-MAC 002! Values only apply to test nozzle-and-holder assembly 0 681 343 009 1 680 750 015 and fuel-injection test tubing

250 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Port closing at prestroke (3.15-3.35)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,4+0,1	16,9 - 17,1	0,4			
300	6,4-6,6	1,1 - 2,1	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s			_ 1		rmediate rated speed			Lower rated Degree of	speed	Control rod	Sliding sleeve travel	
deflection of control	rev/min Controi rod travel mm 2	(LEAG)		Degree of deflection of control lever		travel mm	4	deflection of control lever 7	rev/min 8	travel mm 3	rev/min 10	mm 11
max.	1125	15,2-17,	8	-	-		-	ca.20,5	250	9,5-11,0	1	-
ca. 61	11,4 4,0 1235	1090-110 1180-121 0 - 1,	0						400	7,9-8,1 3,9-5,3 -760=2,0		
								3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	rery characteristics 58 peed 50	Starting Idle switchir	•	Torque- travel	control 5
rev/min	4		rev/min	cm ³ /1000 strokes	m ³ /1000 strokes rev/min cm ⁹ /1000 stroke			travel mm
1	2	3	4	5	6	7	8	9
1000	169,0-171,0	1090-1100 *	750 650	169,5-172,5 155,5-158,5 PLE	100	110,0-170,0	1000 900 750	12,3+0,1 12,3+0,1
			800	103,0-111,0			650 500	

Checking values in brackets

1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 v 1 1. Edition

US-PES 6 P 110 A 720 RS 6006 US-RQV 300/400-850 PA 623-K Komb.-Nr. 9 400 231 139

 $PLE-Ma\beta = 0.740" - 0.820"$

company.

MACK EM 6 250 R 250 PS

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Note VDT-I-MAC 002!

(3.15-3.35) mm (from BDC)

rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,7+0,1	18,5 - 18,7	0,4			
300	4,5-4,7	1,2 - 2,2	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degree of deflection	rev/min	Control rod	(a)	Intermediate rated speed Degree of Control rod deflection travel		rod	Lower rated Degree of deflection	Control rod travel		Sliding s	sleeve travei		
	rod travel		28	of control	rev/min 5	тт 6	•	of control lever 7	rev/min 8	mm 9	3	rev/min 10	mm 11
max.	925	15,2-17	,8	-	-		_	ca.21,5	250	8,0-9	,4	-	-
ca. 59	10,7 4,0 1080	890-900 990-102 0 - 1,	20					(3a)		7,9-8, 3,8-5, -570=2,	,2		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de		Rotational-speed 2b Ilmitation	Fuel deliv	rery characteristics 58 peed 50	Idle	<u> </u>	Torque-control 5		
Test oil ten	np 40°C (104°F) (2) cm³/1000 strokes	intermediate speed rev/min	rev/:nin	cm ³ /1000 strokes	switching point rev/min cm ⁹ /1000 strokes		rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
850	185,0-187,0	890-900 *	700	195,5-198,5	100	110,0-170,0	850 800	11,7 11,8+0,1	
			630	205,5-208,5 PLE			700 630	12,2+0,1 12,5+0,1	
			800	147,0-155,0			500	11,9+0,1	

Checking values in brackets

* 1 mm less control rad travel then col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAC 10,9 b 1. Edition

PES 6 P 110 A 720/3 RS 6001 Komb.-Nr. 0 402 736 631

RQV 300/450-950 PA 408 KR $PLE-Ma\beta = 0.740" - 0.820"$ supersedes company:

MACK

Note VDT-I-MAC 002!

ETAZ 673 A DOM engine:

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015

315 PS/1900 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,4-2,5 Port closing at prestroke (2,35-2,55) mm

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	15,1+0,1	23,3 - 23,5	0,4			
300	5,0-5,2	1,5 - 2,5	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed		Intermediat	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod travel	deflection		Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rod travel	mm (2	of control lever	rev/min	mm 4	of control lever	rev/min	mm 3	1	mm
1	2	3	4	5	6	7	8	9	10	11
max.	970	16,2-17,8	-	-	-	ca.18,5	250	9,8-11,3	250	0,2-1,2
ca.63	14,1 4,0 1200	990-1000 1115-1145 0 - 1,0					300 400 575-6	7,9-8,1 3,8-5,2 535 =2,0	450 700 950	3,7-4,1 5,4-5,8 8,2
						(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten rev/min	stop np. 40°C (104°F) 2	Rotational-speed ②b limitation intermediate speed rev/min ④	Fuel deliv	ery characteristics 5a peed 55 cm ³ /1000 strokes	Starting Idle switching	•	Torque- travel	Control cod travel
1	2	3	4	5	6	7	8	9
900	233,0-235,0	990-1000*	725 600	233,5-236,5 215,5-218,5	100	120,0-180,0	950 900 725	15,0 15,1 15,2+0,1
			300	PLE 101,0-109,0			700 600 500	15,0+0,1 max.14,5 13,9+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

かくう かとう かとう ちょ

Test Specifications Fuel Injection Pumps 1 VDT-WPP 001/4 MAC 11,0 i 8 and Governors

1. Edition

PES 6 P 110 A 720/3 RS 3036 US-ROV 300/450-950 PA 531K Komb.-Nr. 9 400 231 053

supersedes company:

Mack

Note VDT-I-MAC 002!

 $PLE-Ma\beta = 0.740" - 0.820"$

engine.

ETSZ 673 A

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing

1 680 750 015

315 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2 35-2 55)

mm (from BDC)

Rotational speed rev/min	travel		travel cm ³ / 100 strokes mm		Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6		
900	14,7+0,1	22,7-22,9	0,4					
300	4,8-5,0	1,2- 2,2	0,4					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	Upper rated speed			Intermediate	rated spi	eed	Lower rated	speed	Sliding sleeve travel		
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel m.m 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
'	4000	45 0 47		-	-	<u> </u>	20	250	0 5 44 0		
max.	1020	15,2-17	,8	-	-	_	ca.20	250	9,5-11,0	_	-
ca.52	13,7 4,0 1200	990-10 1110-11 0- 1	40				3a)	400	7,9- 8,1 3,5- 4,9 530 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		intermediate speed	Fuel deliv high idle s	<u>ھ</u>	idle switchir	o point	travel	Control rod travel
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	mm .
1	2	3	4	5	6	7	8	9
900	227,0-229,0	990-1000*	725 650	218,0-221,0		110,0-170,0	900 800	14,6+0,1 14,7 14,9+0,1
			300	PLE 105,5-113,5			650	14,9+0,1 14,3+0,1 13,3+0,1

Chucking values in brackets

* 1 mm less control rod travel then cel.

r 7 8 2 9 5 2 9 5 2 9 5 2 5 5 2 5

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MAC 11,0 y 1. Edition

US-PES 6 P 110 A 720/3 RS 6003 Komb.-Nr. 9 400 231 105

US-RQV 300/400-850 PA 623K supersedes $PLE-Ma\beta = 0.740"-0.820"$

Mack

Note VDT-I-MAC 002!

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing 1 680 750 015

EM 6 250 R 250 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1		Fuel delivery cm ¹ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,7+0,1	18,5-18,7	0,4			
300	4,5-4,7	1,2 - 2,2	0,4			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rate	Upper rated speed			Intermediate rated speed			Lower rated	speed	Sliding sleeve travel		
Degree of deflection of control lever	rev/min Control rod (ravel mm	mm rev/min	(S)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm 1
1	2	3		4	5	6	7	8	9	10	11
max.	925	15,2-17,	8				ca.21,5	250	8,0-9,4		
ca.59	10,7 4,0 1080	990 -102	0				₃	300 400 510-	7,9-8,0 3,8-5,2 570 =2,0		

Torque control travel a =

estoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed 2b Ilmitation intermediate speed	Fuel deliv	rery characteristics 5a	Starting Idle awitchir		Torque- travel	-control 5
rev/min	cfh ³ /1000 strokes .	rev/min 4a	rev/min	cm ² /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
850	185,0-187,0	890-900*	630	193,0-196,0 200,5-203,5 PLE 148,0-156,0	100		850 800 700 630 500	11,7 11,8+0,1 12,2+0,1 12,5+0,1 11,9+0,1

Checking values in brackets

* 1 mm less control rod travel than ool. 2

3.83

Geschäftsbereich KM. Kundendienst. Kfz-Ausrustung. c by Robert Bosch GmbH, D-7 Stuttgart 1, Positisch 50. Printed in the Federal Republic of Germany Imprime en République Federale d'Allemagne par Robert Bosch GmbH.

PES 6 P 110 A 720 RS 3024 RQV 300/600-1050 PA 326 KR (1) ... A 720 RS 3024 RQV 300/450- 950 PA 332 KR (2)

supersedes MACK

 $326KR = Ma\beta PLE - 490 - 547 inch.$

company: ETA 676 (285 HP-1)

332KR = Maß PLE - 490-.570 inch.

Note VDT-I-MAC 002!

ETAZ673A(315 HP-2)

Values only apply to test nozzle-and-holder assembly 0 681 343 009 and fuel-injection test tubing All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers 1 680 750 015

A. Fuel Injection Pump Settings

Port closing at prestroke

2.8 + 0.1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	15,1+0,1	23,1 - 23,3	0,4			
300	5,0	1,3 - 2,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

-326 KR (1)

deflection	rev/min Control rod travel	Control rod ta travel mm rev/min 28	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s	mm
ca.68	1070 1150 1200 1280	15,5-18,0 6,0-11,0 0 - 6,8 0		-	-	ca.19	250 350 500 700 830	9,8-11,3 4,6- 6,2 2,5- 5,0 0,3- 2,0	400-	0,6-1,8 600 = 3,1-3,6 5,8-6,2 8,2

Torque controi travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed 2b iimitation intermediate speed	Fuel delivingh idle s		Starting Idle switching		Torque- travel	Control rod
rev/min	cm³/1000 atrokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm¥1000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
1050	206,0-208,0	1090-1100*	600	224,0-230,0	275	140,0-170,0	1050	14,0
			PLE		300	14,0- 24,0	800	14,3
			300	129 -139			600	15,0
			300	123 133			500	14,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

332 KR (2)

oper rated speed egree of rev/min Control rod (1a			Intermediate rated speed			speed	Sliding sleeve travel		
Control	travel	deflection		Control rod travel	Degree of deflection		Control rod travel		1
			rev/min	mm 4	of control lever	rev/min	mm 3	rev/min	mm
2	3	4	5	6	7	8	9	10	11
970	15,5-18,0	-	-	-	ca.19	250	9,8-11,3	300	1,4-2,4
1050	7,0-11,6					350	3,2-4,8	450	3,5-4,3
1100	1,7-7,8					500	2,6-4,0	800	6,0-6,5
1200	0		edu-phoposopo de santa		(3a)	760	0	990	8,3
ri Crin	ev/min Control odtravel nm 2 970 1050	ev/min Control rod Ta Control Control Control Control Control rod Control Cont	ev/min Control rod Tavel Control Contr	ev/min Control rod Ta Degree of deflection of control lever rev/min 2a 2a 5 5 5 5 5 5 5 5 5	ev/min Control rod Travel Control rod Control rod	ev/min Control rod travel of travel	Control Cont	Control rod Control rod	Control rod Control rod

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten	d stop	Rotational-speed (2b) firmitation intermediate speed	Fuel deln high idle s	very characteristics 5a speed 5b	Starting Idle switchin		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
900	230,5-232,5	990-1000*	725	231,5-234,5	100	140, 0-170, 0	950	
			6 00	212,5-215,5	300	14,0-24,0	725	15,1
			PLE				500	13,6
			300	102,0-110,0		T S S S S S S S S S S S S S S S S S S S		

Checking values in brackets

Testoil-ISO 4113

* f mm less control rod travel than col 2

B. Governor Settings

Upper rated s	speed			intermediate rated speed			Lower rated speed			Sliding s	eeve travel
Degree of deflection	rev/min Control	Control rod travel	(la)	Degree of deflection	l	Control rod travel	Degree of deflection	1	Control rod travel		1
of control lever	rod travel	mm rev/min	(2a)	of controi lever	rev/min	mm 4	of control lever	rev/min	mm 3	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
							(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

	stop ap 40°C (104°F) 2	intermediate speed (4a)		peed (50)	switchir		Torque- travei	Control rod
rev/min	cm ³ /1000 strokes	rev/min	r ev /min	cm ³ /1000 strokes	rev/min		rev/min	UL.
1	2	3	4	5	6	7	8	9
				-				

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 59,2 a

1. Edition

PE 6 ZW 140/400 RS 27/2, 53/2

PE 6 ZW 140/410/3 RS 28/2, 54/2

RQUV 300-750 ZW 31

Replaces Firm: MTU

Engine: MMB 820

Please note instructions on sheet 2

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke 2.0-2.1

mm (from BDCZV1. 6

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	ed rod travel Average value		in fuel delivery	Checking values	valve)
min-1	mm	cm³/1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
600	18,0+0,1	491,0-501,0	16,0		
600	4,0-4,2	70,0-90,0	12,0		V
250	4,0-4,2	23,0-43,0	12,0		
,	ł				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor settings

Upper rated	speed		Medium ra	ted spec	ed		Lower rat	ed spee	1	Torqu	e control
Control lever deflection degrees	min-1 2	Control- rod travel mm 3	Control lever flection degrees 4	min ⁻¹ 5	Control rod travel mm 6	-	Control lever de- flection degrees 7	min -1 8	Control- rod travel mm 9	min 1	Control- rod travel mm 11
ca. 85	750 775 800 840 865	21,5-23,5 13,0-18,0 5,0-12,0 0-3,0 0		-	-		ca.19	270 300 325 350 400 540	11,0-13,0 7,6-8,0 5,0-6,2 4,8 3,3-4,3	-	-

Torque control travel dimension a =

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control rod stop at speed	Fuel-de charact	divery deristics	Starting fuel delivery		
min-1 1	cm ³ /1000 strokes 2	min-1	min-1 4	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7	
750	21 mm RW	-	-	•		-	

Checking values in brackets

2.83

·H15

BOSCH

Geschaftsbereich KH. Kundendienst, Kfz-Ausrustung.

- by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany Imprimé en Republique Federale d'Allemagne par Robert Bosch GmbH.

Pump

With these pumps the customer also requests that the stop and full load limits of the control-rod projection be stamped on the pump housing at contol-rod travel 0 mm.

These dimensions, which must be stamped in, can be calculated as follows:

Mark control-rod travel 18 mm (setting point of the pump) with insertion device. Calculate the projection of the control rod front end on pump side 2. Deduct 18 mm from the dimension calculated. Calculate the projection of the control rod with forked piece fitted on pump side 1. Add 18 mm to this dimension. Stamp these dimensions on the front of the pump housing above the spring chamber cover (with plunger-and-barrel assembly 1 the dimension of pump side 1 and with plunger-and-barrel assembly 6 that of pump side 2). Size of figures approx. 5 - 6 mm.

After the insertion device has been removed the O-dimension calculated on pump side 2 must be reached or not reached in the stop position of the control rod.

On pumps with governor ascertain only the dimension on the drive end and stamp this on the housing.

Governor

The lower idle spring must be positioned between its spring seats, and if necessary also the middle spring must be positioned under the outer spring seat, so that the governor specifications are reached.

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 26,5 a

1. Edition

PE8ZWM 160/120 RS 1032/11

RQUV300-120U ZWA 51 R

1-2-6-3-4-5-7-8 je 45 $^{\circ}$ $\stackrel{+}{=}$ 0,5 $^{\circ}$ ($\stackrel{+}{=}$ 0,75 $^{\circ}$)

Replaces

Firm: MTU

Engine: 8 V 331

Hydrfoil Komb. -Nr. 0 406 038 022

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

mm (from BDC) 7v1.8

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min -1	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm³/1000 strokes	
1	2	3	4	5	
600	18,0+0,1	513,0-523,0	16,0(24,0)	510,0-526,0	
600	9,0+0,1	140,0-160,0	12,0(18,0)	135,0-165,0	
300	9,0+0,1	72,0-92,0	11,0 (16,0)	67,0-97,0	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor settings

Uppe. rated Control lever deflection degrees 1	mm min 1	Control- rod -1 tra usin mm 3	Medium ra Control lever flection degrees 4	min-1	Control-	Lower rat Control lever de- flection degrees 7	min - 1 8	Control- rod travel mm 9	min - 1 10	e control Control- rod travel mm 11
ca.84	1200	18,0-18,1	ca.27		14,3-17,2 10,3-11,8		200 300	10,8-14,2 8,0	-	-
ca.84	17,0 4,0 1400	1320-1380		375 500 590-7	8,0 2,5-3,7		400 485-	3,9-5,0 590=0		·

Torque control travel dimension a =

C. Settings for fuel-injection pump with fitted governor

on gove	id delivery ernor control lever il temperature 40°)	Control rod stop at speed	Fuel-del charact		Starting	
min-1	cm ³ /1000 strokes	min-1 3	min-1 4	cm ³ /1000 strokes 5	min-1 6	cm ³ /1000 stroke s 7
		300 = RW 8,0 mm	-	-	-	
						2.83

Checking values in brackets

Adjustment at the idle stop

BOSCH

chaftsbereich KH. Kundendienst. Kfz-Ausrustung. 9 Robert Bosch: GmbH, D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany ime en Republique Federale d'Allemidsie nachbort. Bosch: GmbH.

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 39,7a

1. Edition

PEV 12ZWM 160/120 RS 1030/11 RQU 425-600/1300 ZWA 62-1

Replaces _

Firm:

1-4-10-7 - 5 - 2 - 12- 9 - 3 - 6 - 8 - 11

Engine: MB 873

0-15-60-75-120-135-180-195-240-255-300-315° ±0.5° (±0.75°

0 406 030 999

Specifications apply to test tubing 1 680 750 069

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke 2,5-2,6

mm (from BDC) Zv1, 12

Rotational speed min - 1	Control- rod travel mm	Fuel delivery Average value cm³/1000 strokes 3	Difference in fuel delivery cm ³ /1000 strokes	Fuel delivery Checking values cm³/1000 strokes 5	Spring pre-tension (torque-control valve)
1300	12,0+0,1	375,0-385,0	16,0(24,0)	372,0-388,0	
1300	6,0-6,2	113,0-127,0	18,0(27,0)	110,0-130,0	
425	6,0-6,2	31,0-51,0	16,0(24,0)	27,0-55,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium ra	ted spec	ed	Lower rat	ed spee	d	Torqu	e control
Control lever deflection degrees	min ¹	Control- rod travel mm 3	Control lever flection degrees 4	min-1 5	Control- rod travel mm 6	Control lever de- flection degrees 7	MM min-! 8	Control- rod –1 tmini mm 9	mın '' 10	Control- rod travel mm
50 ±0,5	800	12,0-12,5	ca.31	600	6,4-6,6	ca.18	300	10,8-14,	0 -	-
	1300 12,5 4,0	13,5 1325-1340 1445-1485 1495-1603		800 1300	0,5-2,0 0,5-2,0		450 500 0	6,4-6,6 3,2-5,3 550-640		

Torque control travel dimension a -

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control rod stop at speed	Fuel-de charact	livery eristigerlauf	Starting fuel delivery		
min-1	cm ³ /1000 strokes 2	min-1 3	min-1 4	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7	
1300	381,0-385,0 (378,0-388,0)	-	425	72,0-76,0 12,0 Dispers	ion	-	

Checking values in brackets

^{*} Adjusted with KDEP 1533

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 29,9 d

1. Edition

Replaces

Firm:

Engine: MB 837 Ea 537 kW (730 PS)

 $1 - 2 - 6 - 3^4 - 5 - 7 - 8$ je 45 + 0,5 (+ 0,75)

PE 8 ZWM 140/120 RS 1018/11 RQU 350-500/1050 ZWA 59 DR

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke mm (from BDC) 2.0 - 2.1

Governor adjustement according to VDT-I-420/112

Rotational speed min-1	rod travel Average value mm cm³/1000 strokes		Difference in fuel delivery cm ³ /1000 strokes	Fuel delivery Checking values cm ³ /1000 strokes	Spring pre-tension (torque-control valve)
1	2	3	4	5	
600 600 200 1050 300	18,0 9,0 9,0 - -	373,0-378,0 143,0-163,0 71,0- 91,0 C, Sp. 2 C, Sp. 7	11,0(16,0) 14,0(21,0) 14,0(21,0) 10,0(15,0) 9,0	369,0-382,0 148,0-168,0 66,0- 96,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium rated speed			Lower rated speed .			Torque control	
Control		Control-	Control		Control-	Control		Control-	1	Control-
lever		rod	lever		rod	lever de-		rod		rod
deflection		travel	flection		travel	flection		travel	ļ	travel
degrees	ฑเก−า	mm	degrees	min 🖖	mm	degrees	min '	mm	min ¹	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 62	700 1070 1150 1230 1300	17,5-18,0 9,6-14,0 0,4- 7,0	ca. 43	400 500 570 660	12,0-17,0 6,6- 9,1 0 - 4,8 0			15,3-18,0 12,0-15,7 7,1- 8,3 1,5- 5,2		-

Torque control travel dimension a — Speed regulation: 1 mm less control-rod travel at 1075-1085 min⁻¹. C. Settings for fuel-injection pump with fitted governor

on gove	d delivery rnor control lever temperature 40°)	Control rod stop at speed	Foet-de	wery eris tieerlauf	Starting fuel delivery			
min~¹ 1	cm ³ /1000 strokes 2	min-¹ 3	min-1 4	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7		
1050	373,0-378,0 (369,0-382,0)			80,0-90,0	100	18,0-18,2 mm RW		
					0,5	off solenoid - 1,0 mm in t of stop		

Checking values in brackets

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 37,4 b

8. Edition

PE 10 ZWM 140/120 RS 38/11 RQU 425/1100 ZW 30 DR Governor adjustement according to VDT-I-420/112

Replaces Firm: 10.68 MTU Engine: MB 833

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke 2,0-2,1

mm (from BDCZy1. 10

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min-1	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
600 600 200 1080 900/550	18,0 9,0 9,0 -	373,0-378,0 143,0-163,0 71,0-91,0 C, Sp. 2 C, Sp. 5	11,0 (16,0) 14,0 (21,0) 14,0 (21,0) 9,0 (14,0) 11,0 (16,0)	370,0-381,0 138,0-166,0 66,0-96,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium ra	ted spec	ed	Lower rat	ed speed		Torque control		
Control lever deflection degrees		Control- rod travel mm 3	Control lever flection degrees 4	min -1 5	Control- rod travel mm 6	Control lever de- flection degrees 7	min ·1 8	Control- rod travel mm 9	min -1 10	Control- rod travel mm 11	
max. ca. 58	1100	2,0-6,4	-	-	-	ca.27	600 150 425 800 1100 1140	1,3-1,7 16,5-18,0 5,3-5,8 0,6-1,2 0,2-1,1	900	17,6-18,0 16,8-17,2 16,5-16,7	

Torque control travel dimension a =

mm

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control rod stop at speed	Fuel-de charact		Starting fuel delivery		
min-1 1	cm ³ /1000 strokes 2	min - 1 3	min-1 4	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7	
1080	316,0-320,0 (313,0-323,0)		900	305,0-313,0 (301,0-317,0)		18,0-18,2 mm RW	
			550	271,0-279,0 (267,0-283,0)		5,1-5,7 Dispersion0,8 8,5-10,5	
Li	mit stop screw	to 0,5 - 1,0 mm				Dispersion 2,1	

Checking values in brackets

Shutoff solenoid 0,5 - 1,0 mm in front of stop

WPP 001/4 MB 5,70

7. Edition

PES 6 A 90 D 410 RS 2293 Z

RSV 575-1250 A 1 B 618 L

supersed 0.82

company: Daimler-Benz engine:

OM 352 A

107 kW (145 PS)

Komb.-Nr. 0 400 876 195

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

ort dioding as proof		5 10-5 5 CO				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1230	11,2+0,1	7,5 - 7,6	0,3(0,45)			
575	7,4-7,6	2,1-2,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control		Control rod travel mm	Intermediate Degree of deflection of control lever		Control rod travel mm	4 Lower Degree of deflection of control lever 7		ed Control rod travel mm	3 Torn rev/min 10	que control Control rod travel mm
loose	800 x =		-	•	-	ca.34	575 610 580-	7,5 1,9-2,1 640=2,0	-	-
5 66	1260-1 1400 =	270 = 10,2 0,3-1,7								

Speed difference between 1.0 mm regulated and control-rod travel 4.0 mm at n=35-45min/1 The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	2 Full-load stop 6 Rotation speed lii			el delivery tracteristics	Starting Idle	fuel delivery .	Sa) idle	stop
Test oil tem rev/min 1	cm ³ /1000 stroke s	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
1230	74,5 - 75,5 (72,5 - 77,5)	1260-1270*	-	•	100	71,0-81,0 / 13,8- 14,2 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

WPP 001/4 DAF 8,3 n 4. Edition

En

Testoil-ISO 4113

PE 6 A 95 D 410 RS 2575 RSV 250-750 A7B2124L Komb.-Nr. O 400 676 166

supersed 82 compan DAF

DU 825 engine: Generator

Specifications apply to test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)

mm (from BDC)

RW 9,0 mm

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
750	12,5+0,1	9,9 - 10,1	0,4(0,7)			
250	6,0-6,2	0,7 - 1,3	0,2(0,4)			
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Port closing difference between control-rod travel 3 and max. = 3,0-4,0°.

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	rated spe	ed	(3) Tor	que control
Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		Control rod travel
lever	rev/min	mm	lever	rev/min	mm	lever	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0		-	-	ca. 15	250	6,1	750	12,5+0,1
10030	x =	4,25					250	**	700	12,5+0,3
ca. 40	11,5 4,0 955	770-780 795-815 0.3-1.7					260-3	20 = 2,0	mm	

** then 1/2 turn back.
The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop				Starting Idle	fuel delivery	(5a) Idl	5a) idle stop	
Test oil ten	np. 40°C (104°F) cm³/1000 strokes	Note: changed to rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
750	98,5 - 100,5 (96,5 - 102,5		•	-	100	19,5-21,0 mm RW		-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

WPP 001/4 DAF 6,2 i 1 3. Edition

En

PF 6 A 90 D 320 RS 2547

RSV 250-1200 A5B 779 R

supersedes 8.82 company: DAF DT 615

Komb.-Nr. 0 400 676 141

See service Information VDT-I-DAF 004

Specifications apply to test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,2-2,3 Port closing at prestroke (2,15-2,35) mm (from BDC) RW 9

		(2,15-2,35)			Tall A.	Icaria a su Armana
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
ev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	inan	cm ³ /100 strokes	mm
	2	3	4	2	3	6
1000	10,8+0,1	7,1-7,2	0,3(0,45			
250	5,9-6,1	0,8-1,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed		rated spe		3 Tor	que control	
Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		Control rod travel	
lever	rev/min	mm	lever	rev/min	mm	lever	rev/min	mm	rev/min	mm	
1	2	3	4	5	6	7	8	9	10	11	
100se	800	0,3-1,0	-	-	-	ca.22	250	5,5	1000	10,8-10	,9
	×	= 3,25					250	5,9-6,1	400 300	10,8-11 11,0-11	,0 ,5
ca.54		1240-1250	1				330-	390=2.0			
3	4,0 1450	1280-1310 0,3 - 1,7									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to:	ad stop	6 Rotational- speed limitat.			Starting Idle	fuel delivery	Sa) Idio	e stop
Test oil temp	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes	revimn 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm
LDA 1000	0,7 bar 70,5 - 71,5 (68,5 - 73,5)	1240-1250*	LDA 600	0 bar 50,0 - 51,0 (48,0 - 53,0)		133,0-143 / 19,5 21,0 mm R	+	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Port closing difference between control-rod travel 9 mm and

3.83

21 mm and max. = $2,5-3,5^{\circ}$ camshaft.

D. Adjustment Test for Manifold Pressure Compensator

Testat n = 1000 rev/min decreasing pressure – in bar gauge pressure increasing pressure – in bar gauge pressure DAF 6,2 i 1 -2-

	XXXXXX		
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
RS 2547 +	0,7 bar		10,8 - 10,9
RSV A5B 779 R		0,25	10,6 - 10,7
		0,21	10,1 - 10,4
		0	9,8 - 10,0
٠,		L	

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

40

WPP 001/4 MB 5,7 q 2

10. Edition

En

PES 6 A 90 D 410 RS 2293

Komb.-Nr. 0 400 876 255

RSV 350-1300 A0B 783 L

company

11.82 Daimler-Benz

ompany OM 352 A ngine 110 kW (150 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,15-1,25 (2,10-2,30)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuei delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm³/ 100 strokes 4	тт 2	cm ³ /100 strokes	mm 6
1300	11,4+0,1	7,6-7,7	0,3(0,45)			
350	7,3-7,5	1,0-1,4	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel mm	Control rod travel mm rev/min	Intermed	hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3)	rque control Control rod travel mm
loose		0,3-1,0 3,5	-	•	•	loose	350 100 350	7,4 min. 19,0 7,3-7,5	1300 800 1050	11,4-11,5 11,7-11,8 11,5-11,7
ca. 62	10,0 4,0 1600	1340-1350 1460-1490 0,3-1,7					570-63			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop			Rotational- speed limitat Speed limitat			uel delivery 5	idle stop	
Test oil te rev/min 1	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min B	travel mm 9
LDA 1300 LDA 800	0,7 bar 75,5-76,5 (73,5-78,5) 0,7 bar 67,0-69,0 (64,5-71,5)	1340-1350*	LDA 500 LDA 500	0,7 bar 62,0-64,0 (59,5-66,5) 0 bar 50,0-52,0 (47,5-54,5)	100	78,0-88,0 (75,0-91,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

MB 5,7 q 2

Test	at	n	=

rev/min decreasing pressure - in bar gauge pressure

500	Setting	Measurement	diminution
Pump/governor	Gauge pressure = bar		Control rod travel- difference mm (1) .
PES 6 A RS 2293 +RSVAOB 783 L	0,7	0 0,39	11,7-11,8 10,5-10,6 11,4-11,5
		0,22	10,7-10,9
	The beautiful of the be		

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod t:avel)

Testing the hydraulic start-locking device

Locking at Unlocking at

0.4 - 0.5 bar 0.15- 0.25bar

0

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 UNI 13,8 b

1. Edition

PE 6 P 120 A 720 RS 214 Komb.-Nr. 0 401 846 486

RQV 425-1100 PA 438-2

supersedes
companyUnic-IVECO
engine 8215.02.542

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke (2,0-2,1 1 95-2 15)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mee	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	9,5-9,6	16,7-17,0	0,5(0,9)			
425	5,5-5,7	1,5-2,1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	eed		Lower rated	speed			Sliding s	leeve travel
deflection of control	rev/min Control rod travel mm	Control rod (travel mm rev/min (1a) 2a)	Degree of deflection of control lever	rev/min	Control re travel mm	od ①	Degree of deflection of control lever	rev/min 8	Control r travel mm	od 3	rev/min	1
1	2	3		•	5	-		 '	0			<u> </u>	
max.	1130	15,2-17	8	-	-	-		ca. 11	100 425	min. 5,5-5		630	0,3-0,7 4,3-5,0
ca. 59	8,5 4,0	1140-11 1210-12										870 1100	6,2-6,5 8,2
	1350	0-1,						425-525	•				
								(3e)					

Torque control travel a =

ന്ന

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed (2b) limitation intermediate speed	high ide speed (a)		Starting Idle switchir	. •	Torque- travei	Control rod
rev/min	cm³/1000 strokes	new/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	travel mm
1100	167,0-170,0 (164,0-173,0)	1140-1150*	•	-	100	19,5-21,0 mm RW	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 11,0 i 1 2. Edition

PE 6 P

1 - 6 0 -75
Komb.
All test specific

A. Fuel

Port closing at

Rotational sp

rev/min

1

PE 6 P 110 A 320 LS 3805

RQV 300-1150 PA 524-6

supersede 82

Company:
OM 421

148 kW (201 PS)

1 - 6 - 3 - 5 - 2 - 4 0 -75 -120-195-240-315° - 0,5° (- 0,75°)

0 -/5 -120-195-240-315 - 0,5 (- 0,75

Komb.-Nr. 0 401 846 756

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3,95-4,15)	mm (from BDC)	Zy1. 6		
Rotational speed Control rod F		Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1150	12,6+0,1	12,7 - 12,9	0,4(0,8)			
300	8,5-8,7	1,6-2,2	0,4(0,7)			
					^	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Silding sleeve travel	
	rev/min Control rod travel mm	Control rod travel mm rev/min 3	(a) (2a)	Degree of deffection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	r ev /min 8	Control rod travel mm 3	rev/min	1 mm 11
max.	1150	15,2-17	,8	-	-	-	ca. 19	100 300	min.10,0		1,0-1,2 3,4-3,7
ca. 65		1190-12 1240-12 0 - 1	70				330-740				4,9 - 5,3
							3				

Torque contro! travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di Control-roi Test oil ten		Rotational-speed 2b firmitation intermediate speed	Fuel delivingh idle s	rery characteristics (5e)	Starting Idle switching	. •	Torque- travel	control 5
rev/min 1	cm ³ /1000 strokes	rev/min 49	revi/min 4	cm³/1000 strokes	rev/min	cm³/1000 strokes 7	rev/min	travel mm
1150	127,0-129,0 (124,0-132,0)	1190-1200 *	600	116,0-120,0 (114,0-124,0)		130,0-150,0	-	-

Chucking values in brackets

* 1 mm less control rod travel than col. 2

40

WPP 001/4 PEN 7,0 c 2

1. Edition

En

PE 6 P 100 A 320 RS 291 Z Komb.-Nr. 0 401 876 218 RSV 200-1000 P 1/305 R

_

supersedes→
company Volvo-Penta
engine TD 70 B

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2,75-2,95)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm³/ 100 strokes	mm 2	cm ³ /100 strokes	mm 8
700		10.5-10.7	0,4(0,8)			
225	5,8-6,0	1,0-1,4	0,2(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interme	diate rated	t speed	4	Lower	rated speed	3 Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm	
loose	800 x =	0,3-1,0	-	-	•	ca. 24	225 225 280-32	5,9 5,8-6,0 5=2.0	-	-	
ca. 54	9,8 4,0 1150	1040-1050 1090-1120 0,3-1,7					200-32				

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Govérnor

2b) Fu	Pb Full-load stop St Oil temp 40°C (104°F) Rotational-speed limit Note		11.361	el delivery aracteristics	Starting f	uel delivery 5	4a) idle stop		
Test oil to rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm=/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
700	105,0-107,0 (102,0-110,0)	1040-1050*	•	-	100	210,0-260 = 20,5- 21,0 mm RW	0 -	-	

Checking values in brackets

1 mm less control rod travel than col 2

BOSCH

WPP 001/4 MB 11,0 q 1

1. Edition

En

PE 6 P 120 A 320 LS 3815

RSV 750-1150 P 1/820 R

0-75-120-195-240-315° ± 0,5° (± 0,75°) Values only apply to test nozzle-and-holder 1-6-3-5-2-4 assembly 1 688 901 019 and fuel-injection test
All lest specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers
tubing 1 680 /50 06 Pump Settings

A. Fuel Injection Pump Settings

Daimler-Benz company OM 421 A engine: 184 kW (250 PS) Komb.-Nr. 0 401 876 722

Port closing at prestroke

Testoil-ICO 4113

4,0-4,1

mm (from BDC)

(3	3,95-4,15/				
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm (2)	cm ¹ /100 strokes	cm ³ / 100 strokes	mm	cm//100 strokes	mm
2	3	4	2	3	6
11,4+0,1	16,8-17,0	0,5(0,9)			
3,5-3,7	1,8-2,4	0,8(1,2)			
	Control rod travel mm 2 2 11,4+0,1	Control rod travel mm 2 cm ^{1/100} strokes 2 11,4+0,1 16,8-17,0	Control rod travel mm 2 cm³/100 strokes 2 cm³/ 11,4+0,1 16,8-17,0 0,5(0,9)	travel mm 2 cm ¹ /100 strokes 2 cm ² /100 strokes 4 cm ³ / 100 strokes 2 cm ³ / 11,4+0,1 16,8-17,0 0,5(0,9)	Control rod travel mm 2 cm³/100 strokes 2 cm³/100 strokes 4 cm³/ 11,4+0,1 16,8-17,0 0,5(0,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	rated speed Control rod travel mm	Control rod travel mm rev/min	Intermed	hate rated	speed	Control- lever deflection in degrees 7	_	rated speed Control rod travel mm	1 3 /	rque control Control rod travel mm
loose	800 0,3-1,0 $x = 4,0$		-	•	-	ca. 30	750 750 755-81	4,2 4,1-4,3 5 = 2,0	-	-
ca. 54	4,0	1160-1170 1185-1215 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	11.34	iel delivery paracteristics	Starting f	uel delivery 5	(4a) Idik	e stop
Test oil to	emp. 40°C (104°F) cm³/1000 strokes	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
	168,0-170,0 165,0-173,0)	1160-1170*	-	•	100	170,0-190	0 -	-

Checking values in brackets

* 1 mm less control rod travel than col 2

WPP 001/4 MB 18,3 f 1. Edition

PE 10 P 110 A 320 LS 3818

RQ 750 PA 636

company: Daimler-Benz

engine:

OM 423

197 kW (268 PS)

Komb.Nr. 0 401 849 708

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4

0 -27 -72 -99 -144-171-216-243-288-315° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(3.95-4.15)

mm (from BDC) = RW 9.0 - 12.0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
730	13,5+0,1	13,4-13,6	0,4(0,8)			
300	8,5-8,7	1,4-2,2	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG cher	Control rod	①	Full-load s Setting po	int Control	Test spec		Idle spec Setting p	_		cifications 5	Torque o		3
rev/min	travel mm 2	-		nd travel mm 4	nd tavel mm 5	rev/min 6	rev/min 7	mm 8	rev/min 9		rev/min 11		
-	-		•	-	12,5 4,0 900		-	-	-	-	•	-	

Torque-control travel
on flyweight assembly dimension a =

Speed regulation: At

750-755 min'

1 mm less control rod travel

C. Setting's for Fuel Injection Pump with Fitted Governor

Full-load di governor di Test oil ten	elivery on ontrol lever pp. 40°C (104°F)	Control rod stop	Fuel delive	ery characteristics 36	Starting fi	Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7
730	134,0-136,0 (131,0-139,0)	-	-	-	100	130,0-150,0

Checking values in brackets

3.83

BOSCH

40

WPP 001/4 MB 11,8 a 2 2 • Edition

En

PE 6 P 100 A 720 RS 15
Komb.-Nr. O 401 846 186

RQ 250/1100 PA 43 DR

KG 520/1100 PA

supersedes 8.8

company: Daimler-Benz

ergine: OM 355

Testoil-150 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95) mm (from BDC)

9.0 - 12.0 mm RW

		(-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		•	•	
Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1100	13,4+0,1	11,6 - 11,8	0,3(0,6)			
250	7,9-8,1	1,8 - 2,4	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	(1)	Full-load s	int	Test spec	cifications (4)	Idle spec	-		cifications (5)	Torque o	(3)
rev/min	control rod travel mm	rev/min 3	Control red travel mm 4	Control red travel rnm 5	rev/min 6	rev/min 7	Control red travel re:m	rev/min 9	Control rod travel mm	rev/min	travel
600	15,6-16,4	600	16,0		1145-1160 1200-1230 0 - 1,0		8,0		min.9,6 7,9-8,1 50 = 2,0	-	-

Torque-control travel on flyweight assembly dimension a =

mm

1145-1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil terr		Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fi	d Contra
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm
1100	116,0-118,0 (114,0-120,0)	450	450	98,0-102,0 (95,5-104,5)	100	140,0-160,0

Checking values in brackets

2

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MAN 11,1 q 6 3. Edition

En

PES 6 P 120 A 720 LS 388

RQ 250/1100 PA 452

Komb.-Nr. 0 402 046 195

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersede MAN Company: D 2566 MK (F)

engine: 235 kW

All test specifications are valid for Bösch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDO) y1. 6

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,1+0,1	21,7-22,0	0,5 (0,9)			
250	6,3-6,5	1,1-1,7	0,8 (1,2)			
	* ************************************		1			
	0 10 10 10 10 10 10 10 10 10 10 10 10 10	\$ 1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Control rod Travel roin rom 4	Test specification of travel men 5	rev/min 6 1145-1160	rev/min 7	Control rod travel	rev/min 9	Control rod travel mm	11	Control rod travel mm
ात व्यक्ति भाग स्थाप 4	red travel mm 5	6	7	rad travel mm 8	9	travel mm	11	Control rod travel mm
0 20,0	10,3	1145-1160	250	8 5 /1	9	10	11	12
0 20,0		1145-1160	250	5 1	100			
a washington site , it does not some tide (of	1400	1185-1215 0 - 1,0		0,4	250	m1n./,9 6,3-6,5 390= 2,0	865	11,3-11,4 13,1-13,2 12,7-12,9 11,7-12,0
0,7				11	45-11	60 min 1		1 mm less contro
_	- , .	0,7	~ * * *	- 1.				0,7 1145-1160 min ⁻¹

C. Settings for Fuel Injection Pump with Fitted Governor

	delivery on control (ever mp. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics 3b	Starting i	ruel delivery 6
revimin 1	cm ³ /-1000 strokes 2	rev/min 3	rey/min	cm ³ /-1000 strokes	rev/min	tod travel
LDA 750	1,0 bar 217,0-220,0 (214,0-223,0)	-	LDA 650	1,0 bar 208,0-213,0 (205,0-216,0)	100	205,0 - 225,0 (201,0 - 229,0)
1100	180,0-185,0 (177,0-188,0)	no adalanjimanjimanjimanjimanjimanjimanjimanjim	500	0,34 bar 145,0-150,0 (142,0-153,0)	depressioner de sederado e	
			LDA 500	0 bar 101,0-104,0 (98,0-107,0)	:	:

Checking values in prackets

5.33

J9

BOSCH

- 2 -

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 q 6

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 388 + RQPA 452	1,0	0 0,34 0,61	13,1 - 13,2 9,4 - 9,5 10,9 - 11,0 12,5 - 12,9

Notes

-11 when n =

revimin and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 SCA 11,0 r 4

En

PE 6 P 110 A 720 RS 3040 Komba-Nr. 0 401 876 720

RSV 350-1100 P1/481

supersedes Scania company DS 11 engine: Schlepper

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(3,25-3,45)

mm (from BDC)

= RW 9,0-12,0 mm

Rotational speed	Control rad travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm ³ / 100 strokes	mm 2	cm ³ /100 strokes	mm 6
1100	13,1+0,1	15,8-16,0	0,6(0,8)			
350	4,4-4,6	1,7-2,1	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	rated speed		Intermed	liate rated	speed	Lower rated speed			Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control- lever deflection in degrees	rev/min	Control rod travel mm	rev/min	travel mm
1	2	3	*	5	6	<u>'</u>	٥	3	-	
loose	800	0,3-1,0	-	•	-	ca. 23	350	4,0	-	-
	x =	2,75					100	min. 20,0		
ca. 66	12,1 4,0 1350	1140-1150 1220-1250 0,3-1,7					350 460-520			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	li-load stop emp. 40°C (104°F)	Rotational- speed limitat	I LANDER	el delivery aracteristics	Starting f	uel delivery 5	da idle stop		
rey/men	cm ³ /1000 strokes 2	changed to .) rev/min 3	rev/mm	cm ³ /1000 strok es 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9	
1100	158,0-160,0 (156,0-162,0)	1140-1150*	700	161,5-164,5 (159,0-167,0)	100	240,0-290 = RW 20,0 21,0 mm		-	
					350	17,0-21,0			

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

BOSCH

Geschaftsbereich KH. Kundendienst. Ktz-Ausrustung. £ 1980 by Robert Bosch GmbH. Postfach 50, 0-7000 Stuttgart 1. Printed in the Federal Republic of Germany timprimé en République Federale d'Allemagne par Robert Bosch GmbH.

40

WPP 001/4 PEN 6,0 e 2. Edition

En

PES 6 MW 100/320 RS 1004 0 403 476 011

RSV 325-1250 MW/308

supersed 4.82
Company TD 60 D
engine 118 kW (160 PS)

1 - 5 - 3 - 6 - 2 - 4

 $0 - 60 - 120 - 180 - 240 - 300 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,80-2,90 (2,75-2,95)

mm (from BDCRW 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm-/100 strokes 3	Cim³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	10,9+0,1	8,1 - 8,3	0,35(0,6)	*]
325	4,7-4,9	0,95-1,35	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed		Intermed	diate rated	speed	4		rated speed	3 Torque control	
Degree of deflection	Control rod	Control rod travel				Control- lever		Control rod travel		Control rod travel
of control	(C)	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 26	325	4,3	350	11,5+0,1
	x =	4,0					325	4,7-4,9	500	11,2-0,1
ca. 51	1335-13	330 = 9.0 $365 = 4.0$ $365 = 1.7$					450-51	0 = 2,0	1250	10,9+0,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	H-load stop	6 Rotational-	6 Rotational- speed limital 3a Fuel delivery characteristics			uel delivery 5	(4a) Idle stop		
Test on te reviewe 1	cm+1000 strakes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm41000 strokes	rev/min	Control rod travel mm	
1000	81,0-83,0 (79,0-85,0)	1290-1300*			100 325	min. 140 9,5-13,5 7,0-16,0	325	4,8	

Checking values in brackets

* 1 mm less control rod travel than col 2

WPP 001/4 RVI 5.5 a

1. Edition

PES 6 MW 80/320 RS 1104 RSV 300-1450 MW 2/801 0 403 476 013

supersedes company RVI MD 060212 engine 98 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC) RW 9,0-12,0

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Oifference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1450	10,2+0,1	5,85-5,95	0,25 (0,4			1
300 800	7,2-7,4 11,6-11,7	0,85-1,15	0,20(0,35 0,35(0,45	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel	rev/min Control rod travel mm rev/min	intermed	iate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	rev/min	que control Control rod travel mm
loose	800 x =	0,3-1,0		•		ca. 20	300 300	6,7-6,8 7,2-7,3		11,6+0,1 10,2+0,1
ca. 57	1490-1 1540-1						100 430-49	min. 19,0		10,2+0,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(29)	H-load stop	6 Rotational- speed limitat	18.3388	el delivery paracteristics	Starting fi	uel delivery 5	40	Stop Control rod
Test oil te rev/min	cm-/1000 strokes	Note. changed to) rev/min 3	revi-nin 4	cm ³ /1000 strakes 5	rev/min 6	cm³/1000 strokes 7		travel mm 9
1450	58,5-59,5 (57,0-61,0)	1490-1500	800	56,0-58,0 (54,0-60,0)	100	65,0-75,0 (62,0-78,0		7,2-7,
					300	8,5-11,5 (7,0-13,0)		· (~
						(7,0-13,0)		

Checking values in brackets

* 1 mm less control rod travel than col 2

113

40

WPP 001/4 VOL 6,0 r

1. Edition

En

PES 6 MW 100/320 RS 1111 RSV 325-1400 MW 2 A 314 company engine Volvo

184 kW

0 403 476 016

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,05-3,25)

mm (from BDC) RW 9,0-12,0

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1000	13,0-0,1	12,1-12,3	0,35 (0,6)			
325	5,6-5,7	0,95-1,35	0,35(0,55)			
1400	13,0+0,1		0,5 (0,7)			
1000	10,5+0,1					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of	rated speed Control rod travel mm		interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Centrol rod travel mm
loose	800 X =	0,3-1,0 2,75				ca.22	325 325	5,1-5,2 5,6-5,7	350 500	13,5+0,1 13,0+0,1
ca. 60	1440-14 1505-15	50 = 12,0 35 = 4,0					100	min. 19,	0	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	#-load stop	6 Rotational- speed limitat	(3a) Fu	el delivery aracteristics	Starting f			
Test oil to	cm ³ /1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1000	0,8 bar 121,0-123,0 (119,0-125,0)	1440-1450 *	ША 1400	0,8 bar 119,0-123,0 (117,0-125,0)	100 325	19,0-21,0 mm RW 9,5-13,5	325	5,6-5,7
			LDA 1000	0 bar 83,0-85,0 (81.0-87.0)		(7,0-16,0)		

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel-
	Gauge pressure = ba	Gauge pressure = bar	difference mm (1)
RS 1111 + RSV 314	0,8 bar	0 bar 0,48 bar 0,18 bar	13,0-13,1 10,5-10,6 12,4-12,5 11,1-11,2

Notes.

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

WPP 001/4 MB 18.3 e 2. Edition

RQ 300/1050 PA 656 PE 10 P 120 A 320 LS 3824 1-8-7-6-3-5-2-10-9-4

 $0-27-72-99 -144-171-216-243 -288-315° \pm 0.5° (\pm 0.75°)$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes 10.82

Daimler-Benz company:

OM 423 LA engine:

346 kW (470 PS)

Euclid Komb.-Nr.

0 401 849 707

A. Fuel Injection Pump Settings 4,0 - 4,1 Port closing at prestroke (3,95-4,15)

mm (from BDCZy1. 10

		(3,33-4,13)		,		
Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1050	11,3+0,	17,7-17,9	0,5 (0,8)			
300	5,0-5,2	1,6-2,2	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider	Full-load s Setting po	•	•	: cifications (4)	Idle spec	_		cifications (5)	Torque	(3)
rev/min 1	Control rod travel mm	rev/min 3	Control rod travel rnrrt 4	Control red travel mm	∵ ev /min 6	rev/min 7	Control rod travel rnm 8	rev/min 9	Control rod travel mm	rev/min	Control rod travel mm
600 VH =	19,2-20,8 max. 46°	600	20,0	10,3 4,0 1300	1095-1110 1165-1195 0∍1,0		4,3	300	min. 5,8 4,2-4,4 375 = 2,0	-	-
	control travel	9					10	95-11	O min-1		1 mm less contro

Torque-control travel on flyweight assembly dimension a =

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	tetrvery on control lever np. 40°C (104°F)	Control rad stop (3a)	Fuel deliv	ery characteristics	コレント	Starting fi	uel delivery d Control
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes:/ mm 7
LDA 1050	0,9 bar 177,0-179,0 (174,0-182,0)		LDA 600 LDA 500	0,9 bar 173,0-179,0 (170,0-182,0) 0 bar 141,0-143,0 (138,0-146,0)	ter transfer springers and the state of the	100	150,0-170,0

Checking values in brackets

3.83

BOSCH

Geschaftspereich KM. Kundend enst. kfg. Ausrustung ic. 1980 by Ropert Bosch GmoM. Postfach 50. D-7:000 Stuttgart ti Printed in the Feiter's Reductio of Germany -mprime ਅਮਰੀਕਰਪਾਪਕ ਸੰਕਰਵਾਤਕ ਤੋਂ ਸਿਫਾਸਕਧਾਕ par Ropert ਤੋਂਹਤਾਰੀ, ਤਾਸਟਿਲ

D. Adjustment Test for Manifold Pressure Compensator

MB 18,3 e

-2-

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/gavernor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm (1)
PE 10 PLS 3824 + RQPA 656	0,90	0 0,41 0,35	11,3 - 11,4 10,2 - 10,4 10,9 - 11,1 10,5 - 10,6
:			

Notes

(1) when n =

revimin and gauge pressure =

bar (= maximum full-load control rod travel)

J17

40

WPP GO1/4 MB 14,6 g

4. Edition

<u>En</u>

PE 8 P 120 A 320 LS 3807 RQ 300/1150 PA 546

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \stackrel{+}{-}0,5^{\circ} (\stackrel{+}{-}0,75^{\circ})$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes 4.83

company: Daimler-Benz

engine: OM 422 A 243 kW (330 PS)

Komb.-Nr. 0 401 848 733

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers'

A. Fuel Injection Pump Settings

Port closing at prestroke 4,0-4,1 (3,95-4,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1150 300	10,7±0,1 5,2-5,4	15,6-15,8 1,2-1,8	0,5(0,9) 0,8(1,2)			
750/500	****	C, 4 u. 5	0,7(1,1)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	(I)	Full-load s Setting po	oint	Test spec	crifications (4)	idle spec	point		critications (5)	Torque o	Control rod
	Control rod travel mm	rev/min 3	red travel ment	Control red brands rrane 5	rev/min 6	rev/min 7	red travel rnm 8	rev/min 9	control rod travel mm	rev/min 11	travel mm 12
600	19,2-20,8	600	20,0	9,7 4,0	1200-1215 1235-1270		4,5	100 300	min.6,0 4,4-4,6	1150 750	10,7-10,8 11,0-11,3 10,9-11,3
VH =	max. 46°							340-	380 = 2,0	900	10,5-11,5
									4		

Torque-control travel on flyweight assembly dimension a =

0,2

1200-1215 min⁻¹ Speed regulation: At 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ap. 40°C (104°F)	Control rod stop 3	Fuel delive	ery characteristics 3b	Starting for Idle spec	d Contras
rev/min 1	cm ³ /-1000 strokes 2	rev/mith 3	rev/min 4	cm ³ /~1000 strokes 5	rev/min	cm ³ /1000 strokes-/ mm 7
LDA 1150	0,7 bar 156,0-158,0 (153,0-161,0)	-	LDA 750 LDA 500	0,7 bar 172,0-174,0 (169,0-177,0) 0 bar 135,0-137,0	100	140,0-160,0 (136,0-164,0
			300	(132,0-140,0)		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 g

. 2 -

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 3807	0,47		10,9-11,3
mitPA 546		0 0,40	10,2-10,4 10,3-10,6
•			

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

J19

3

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (2) and Governors

40

WPP 001/4 MAN 11,4 c

1. Edition

PES 6 P 120 A 720 LS 457

RQ 750 PA 566

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedae companyMAN engine: D 2565 MLE 198 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,95-3,15)

mm (from BDC)Zy1. 6 =

RW 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700 250	12,5+0,1 6,1-6,3		0,5(0,8) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che		1	Full-load s Setting po	int	Test spec		ldle spec Setting p	oint		cifications 5	Torque d	control	3
	Control rod travel mm		rev/min 3	Control rad travel rnm 4	Control rad travel rmm 5	rev/min 6	rev/min 7	Control red travel mm	rev/min 9	Control rod travel mm	rev/min 11	travel mm 12	
-	•		-	••	11,5 4,0 900	750-755 775-785 0-1,0	-	-	-	-	-	-	
			<u> </u>						750-7	55 min		1 mm less co	

Torque-control travel on flyweight assembly dimension a =

mm

Sneed regulation: At

mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor d Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	36)	Starting for	Contru
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes:/ mm 7
700	202,0-204,0 (199,0-207,0)	-	-			100	19,5-21,0 mm RW

Checking values in brackets

750

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 17.4 b 3

1. Edition

PE 10 P 120 A 520/5 LS 850

RO 750 PA 404-2

supersedes сомрапу

1-8-7-6-3-5-2-10-9-4 0-27-72-99-144-171-216-243-288-315° -0,50 (-0,75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

engine: D 2540 MLE

tubing 1 680 750 067.

283 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Komb.-Nr. 0 401 849 164

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)Zy1. 10

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
700	11,8+0,1	19,1-19,4	0,5(0,9)			
250	6,6-6,9	2,2-2,6	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider Full-load significant Ful			ed regulation Test specifications 4								
! !	Control rod travel mm	rev/min 3	Contrai rad travel rrim 4	Central red travel mem 5	rev/min	rev/min 7	Control rod travel mm	rev/min 9	Control rod travel mm	rev/min 11	Control rod travel mm
-	-	•	-	10,8 4,0 900	750-755 780-790 0-1,0	-	-	-	-	-	-
							7	50 - 75	5 min-1		1 mm less control

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery idle speed		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 stroke s 5	rev/min	od tradi cm ³ /1000 strokes / mm 7	
700	191,0-194,0 (188,0-197,0)	•	-	•	100	19,5-21,0 mm RW	

Checking values in brackets

2.33

BOSCH

schaftsbereich Kiel Kundendienst. Kfz Ausnistung. 1943 - ხუ პინგო მეფეგ შეოტო - პიგუფერ წებ. ე. 1193 - მხექტეგური - პინუფესი ქნგ წყეფოც მგნებით - აქ Germany კო იგ აც იაგენების გა წყეფის გა გადა სეთვესოს აქარანებით სათხებით მეგის.

WPP 001/4 MB 21,9 a 1 1. Edition

PE 12 P 120 A 320 LS 3819

RQ 900 PA 634

supersedes _

company: Daimler-Benz

OM 424 A

1 - 5 - 9 - 8 - 3 - 4 - 11 - 10 - 2 - 6 - 7 - 12 0 -15 -60 -75 -120 -135 -180 -195 -240 -255 -300 -315° $\stackrel{+}{=}$ 0,5° ($\stackrel{+}{=}$ 0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

Komb.-Nr. 0 401 840 704

Aut test specifications are varied for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

-	•	aci mijeonon	• .
			-4

Testoil-ISO 4113

4,0 - 4,1 mm (from 8DC) 7 v 1 12

. 011 01000.		3.95-4.151		2/1. 12				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6		
850	12,0+0,1	17,9-18,1	0,5 (0,9					
300	4,8-5,0	1,2-2,0	0,8 (1,2					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider Full-load spec		int	Test spec		Idle speed regulation Setting point Test specifications 5				Torque control Control rod		
rev/min	control rod travel mm	rev/min 3	Control rest travel rsnm 4	Centrel red travel rnm 5	rev/min 6	rev/min 7	Control red travel rmm 8	rev/min 9	Control rod travel mm 10	rev/min 11	travel mm
-	-	-	-	10,8 4,0 1050	935-945	-	-	-	•	-	-

Torque-control travel on flyweight assembly dimension a =

900 - 905 min⁻¹ Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ip. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting (Contra
rav/min 1	cm ³ /-1000 strok es 2	rev/min 3	rev/miri 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm 7
850	179,0-181,0 (176,0-184,0)				100	180,0-200,0
	direction of the state of the s			American		

Checking values in brackets

3.83

BOSCH

40

WPP 001/4 MB 11,4 i

4. Edition

En

PES 6 P 120 A 820 LS 3077 RQ 300/1100 PA 585 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes11.81

company Daimler-Benz OM 407 LA

235 kW (320 PS)

Komb.-Nr. 0 402 046 722

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,95-4,15)

mm (from BDQV] . 6

Rota rev/		Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1	1100 300	13,4+0,1 5,5-5,7		0,5 (0,9 0,8 (1,2			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Checking of slider Full-load sp PRG check Type Setting por		int	Test spec						Torque control	
rev/min	Control rod travel mm	rev/min 3	Control rod travel rring 4	Central real travel mm 5	rev/min	rev/min 7	Control red travel rram 8	rev/min 9	Control rod travel mm	rev/min 11	Control rod travel
650	19,2-20,8	650	20,	0 12, 4,0	1145-1160 1200-1230	300	4,9	300	min.6,5 4,8-5,0 10=2,0 mm	-	-
	cotrol travel						1	145-1	160 min -1		1 mm less contr

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever pp. 40°C (104°F)	of lever (2) (3a		ery characteristics 3b	Starting for	d Contra
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm³/-1000 strok es 5	rev/min	cm ³ /1000 strokes:/mm 7
LDA 1100	0,70 bar 212,0 - 214,0 (209,0 - 217,0)		LDA 600 LDA 500	0,70 bar 205,0 - 211,0 (202,0 - 214,0) 0 bar 146,0 - 148,0 (143,0 - 151,0)	100	170,0 - 190,0

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

MB 11,4 i -2-

Test at n =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P LS 3077 + PA 585	0,70	0 0,42 0,31	13,4-13,5 10,7-10,8 12,6-12,7 11,4-11,5

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 00 1/4 MB 21,9a

3. Edition

supersedes 6.82

PE 12 P 120 A 320 LS 3819 Port closing at prestroke

RO 750 PA 635

company: Daimler-Benz 1- 5- 9- 8- 3- 4- 11- 10- 2- 6- 7- 12 0-15-60-75-120-135-180-195-240-255-300-315° -0,5° (-0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test 330 kW (449 PS) Generator

OM 424 A

Komb.-Nr. 0 401 840 705

At the representation One / 150 to 60 sech Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(3.95-4.15)

mm (from BDQZy1. 12

Rotational speed	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,9+0,	1 19.3 - 19.5	0,5(0,8)			
300	4,8-5,	0 1,4 - 2,0	0,8(0,7)			
· · · · · · · · · · · · · · · · · · ·	of the state of th					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check	Full-load :	•	-	cifications (4)	ldle spec	-		cifications (5)	Torque o	_	3)
Control rod travel rev/min mm 1 2	rev/min	Control red travel rmm 4	Control red travel mm 5	rev/min	rev/min 7	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
-	-	-	10,9 4,0	750-755 780-790	-			•	•	•	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

750-755 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	envery on ontrol lever pp. 40°C (104°F)	Control rod stop	Fuel delive	ery characteristics (3b)	Starting fi Idle spee	d Cantral
rev/min	cm ³ /- 1000 strokes 2	revimin 3	rev/min 4	cm ² /-1000 strokes 5	revimin 6	cm ² /1000 strokes / mm 7
700	193,0 - 195,0 (190,0 - 198,0)			•	100	180,0 - 200,0

Checking values in brackets

WPP 001/4 KHD 15,8 q

3. Edition

PE10P110A920/5 LS 3073

RQ300/1150PA535

supersedes 1.83 company

Komb.-Nr. 0 401 849 702

1-10-9-4-3-6-5-8-7-2

0-27-72-99-144-171-216-243-288-315 ±0.5 (±0.75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

BF10L413F 265kW (360 PS) / 2050 min-1 bzw.259 kW (352 PS) / 2300 min⁻¹

(Maxidyne)

A. Fuel Injection Pump Settings

2,8-2,9 Port closing at prestroke

Rotational speed	Control red travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
800	11,6+0,	13,8-14,0	0,4(0,8)			
300	6,9-7,	1,8-2,4	0,4(0,7)	7		
	•	:				:
	î					1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che		Full-load s		•	cifications (4)	Idle spec	_		cifications (5)	Torque o	control 3
rev/min	Control rod travel mm 2	rev/min	Control rod travel rnrn 4	Control red travel mm 5	rev/min 6	rev/min	Control rod travel rmm	rev/m:n 9	Control rod travel mm 10	rev/min 11	travel
	19,2-20,9 max.46	700	20,0	9,7 4,0 1350	1195-1205 1220-1250 0-1,0	Ł	7,0	300	6,9-7,1	800 1020	10,7-10,9 11,6-11,7 11,5-11,7 11,2-11,4

Torque-control travel on flyweight assembly dimension a =

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting fi Idle spee	uel delivery d	6 Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes		rev/min 6	cm ³ /1000 strokes	rod travel
LDA 800	0,9 bar 138,0-140,0 (135,0-143,0)		LDA 500	0 bar 85,0-89,0 (82,0-92,0)		100	115,0-140,	,0

Checking values in brackets

5.83

BOSCH

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

200			
Pump/governar	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE10PLS3073 + PA535	0,55	0,90	11,2-11,3 11,6-11,7
		0	9,4-9,5
		0,39	10,1-10,3
		* * * * * * * * * * * * * * * * * * *	
			a secondario

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)



Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 SCA 8,0 e 2 4. Edition

En

PE 6 P 110 A 720 RS 393

RSV 350-1200 P 1/462 R

supersedf 12.82

Komb.-Nr. 0 401 876 240

company Scania engine D 8

An test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Porticinsing at prestroke

Testoil-ISO 4113

3,0-3,1 (2,95-3,15)

mm (from BDC)

Protestical Specia	Contractor	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring preitens uning ctorque control valves
revimit	mm 2	cm 100 strokes	cm: 100 strokes 4	mm 2	cm 100 strokes	lu lui
600	12,0+0,1	8,7-8,9	0,5(0,8)			2,5 ±0,1
350	7,3-7,5	1,5-1,9	0,2(0,4)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	rrated speed Control rod travel mm		-	hate rated		Control lever deflection in degrees	t ower	ratmi speed Control rod trave: mm	rev min	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,0	-	5	-	ca.31	350 350	6,5	-	-
ca.71	11,0 4,0 1450	1240-1250 1300-1330 0,3-1,7					595 -	655=2,0mm		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(1)	ult load stop	6 Rotational speed limitat	11.3711	iei delivery naracteristics	Starting t	fuel derivery 5	4a M Stop	
rev min 1	emp 40 C (104 F) cm¥1000 strokes 2	Note changed to 1 rev min 3	rev min	cm3-1000 strokes	rev min	cm3 1000 strokes 7	rev min	Control rod trave: mm 9
600	37,0-89,0 (85,0-91,0)	1240-1250*	1200	99,5-102,5 (97,0-105,0)	100	150-200 = 20,0- 21,0 mmRW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

BOSCH

eschäftsbereich KM kundend enstikts Ausrustung. 1980 by Robert Bosch GmbH. Pustfach 50. D. 7000 Stuttgatt til Printed ir the Federal Rebublik. I Nigern yr Horimelen Republique hederale dis Allemagne bar Robert Brisch GmbH.

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 SCA 11,0 s 1

3. Edition

PE 6 P 110 A 720 RS 3065

Komb.-Nr. 0 401 876 719

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

RSV 350-1100 P1/481

En

supersedes

company engine

10.81 Saab-Scania DN 11 01

A. Fuel Injection Pump Settings

Fort closing at prestroke

estoil-ISO 4113

3,3-3,4 (3,25-3,45)

mm (from BDC)

RW 9,0-12,0 mm

Rutational Speed	Control rod travel	Fuel delivery	Differen e	Control rod travel	Fuel delivery	Spring pre-tensioning storque control valves
rev mit	mm (2)	cm:/100 strokes	cm 100 strokes 4	m.m 2	cm=100 strokes	mm ti
1100	12,5+0,1	13,5-13,7	0,5(0,8)			· 2,5± 0.1
350	6,2-6,4	1,5-1,9	(0,2(0,4)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed		Interme	diate rated	speed	4		rated speed [Control rod	1(3)	rque control
Degree of deflection	travel	travel				Control- lever		travel		travel
of control tever	mm 2	am rev min	4	5	6	deflection in degrees 7	revimin 8	g mm	rev miri 1(1	mni 11
loose	800	0,3-1,0	1	-	-	ca.20	350	5,5	-	-
	x =	3,25					100 350	min.20,0 5,9-6,1		
ca.66	1210 -	1150=11,5 1240= 4,0 0,3-1,7					490-			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40 C (104 F)	Rotational speed limitat Note changed to		el delivery aracter stics	Starting f Idle	uel delivery 5	4a ide	Control rod
revimin 1	cm·/1000 strokes 2	rev/min	revimin 4	cm 3 /1000 strokes	revimin 6	cm3-1000 strokes 7	revim n 8	mm 9
1100	135,0-137,0 (133,0-139,0)	1140-1150*	600	132,5-135,5 (130,0-138,0)	100	190,0-240,0 bei 20,0- 21,0mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Distributor-type **Fuel-injection Pumps**

WPP 001/4 Volvo 3,6 g1 2 Edition

VE 6/11 F 1800 L 19-7 0 460 416 025

supersedes 12,82

TAMD 40 B (121 kW)

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,2

+0,02 (0,04)

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,6-3,0	mm		:
1.2 Supply pump pressure	1500	6,2-6,8	bar (kgf/cm²)		
1 3 Full-load delivery without	1500	78,0-79,0	cm ³ /1000 strokes		3,0(3,5)
charge-air pressure Full-load delivery with	-	-	cm ³ /1000 strokes		Ì
charge-air pressure 1 4 Idle speed regulation	400	8,5-12,5	cm ³ /1000 strokes	- 1 deser- 2 deser-	3,0(3,5)
1.5 Start	100	min. 60	cm ³ /1000 strokes	1	
1.6 Full-load speed regulation	1900	43,5-49,5	cm ³ /1000 strakes		
1.7 Load-dependent start of delivery	-	•			

2. Test Spe	ecifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	1000 0,7-1,5(0,4-1,8)	1500 (2,1-3,5)	1750 3,6-4,4(3,3-4,7)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,3-2,9		1750 7,1-7,7
Overflow delivery	n = rev/min	600 55-138(40-153)		1800 55-138(40-153)
				3 Dimensions

	cm ³ /10 s	cm ³ /10s 55-138(40-153)			55-138(40-153)		
2.3 Fuel deliveries	Rot speed		Charge-air press.	3. Dimen	SIONS for assembly and adjustment mm		
End stop	2130 2050 1900 1770 1500 600	max. 2,5 6,5-12,5(5,0-14,0) (42,0-51,0) 72,8-75,8 (71,6-77,0) (75,8-81,2) 66,5-70,5 (65,1-71,9)		K KF MS SVS	5,9-6,1 0,9-1,1 max. 2,3		
switch-off				۸ [†] K B XL	18,7-20,7		
idle stop	589 500 400 120	0 max. 2,0 (6,0-15,0) min. 60		Observations			
2.4 Solenoid	max.cut-m vo	max. 60 mage xxxx min. 10 V xxrated voltage 12V.					

K6

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 REN 2,0 d 2. Edition

VE 4/9 F 2200 R 69 0 460 494 055

supersedes 6_82

company: Renault engine:

J 8 S - 702

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

troke setting	-	mm	see VD1-W-460/

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1400	3,9-4,3	mm	0,74	
1.2 Supply pump pressure	1400	5,1-5,7	bar (kgf/cm²)	0,74	•
1.3 Full-load delivery without	600	32,5-35,5	cm ³ /1000 strokes	0	2,5
charge-air pressure Full-load delivery with	1400	51,0-52,0	cm ³ /1000 strokes	0,74	
charge-air pressure 1 4 Idle speed regulation	350	9,0-13,0	cm ³ /1000 strokes	0	2,5
1.5 Start	100	min. 60,0	cm³/1000 strokes	0	1
1 6 Fulf-load speed regulation	2400	23,0-29,0	cm ³ /1000 strokes	0,74	
1.7 Load-dependent start of delivery	•				

2. Test Spe	cifications	checking values in brackets ()	
2.1 Tirning device	n = rev/miñ mm	1000 1,8-2,6(1,5-2,9)	1400 1800 200C (3,4-4,8) 5,6-6,4(5,3-6,7) 6,2-7,0(5,9-7	,8)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 1,9-2,5	1800 6,3-6,9	
Overflow delivery	n = rev/min cm³/10 s	500 55-138(40-153)	2200 55-138(40-153)	
			A Di-	-

	cm ³ /10 s	55-138(40-	153)		23.	-136(40-155)
2.3 Fuel delivenes				,	3. Dimer	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)	Designation	and adjustment mm
End stop	2700 2500	max. 2,0 max.17,5		0,74	K	3,2-3,4
	2400		(22,0-30,0)	0,74	KF	5,7-5,9
	2200 2000	43,0-46,0	(42,2-46,8) (42,7-47,3)	0,74	MS	1,4-1,6
	1400 1000		(49,2-53,8) (44,7-49,3)	0,74	svs	max.5,3
	700 600		(36,7-41,3) (31,7-37,0)	0.2	6 1 1	
			(31,7-37,07		ΑXK	20,2-22,2
switch-off	2200	; ; ; ;			aXL	9,1-12,4
idle stop	480 375 350	max. 2,0 4,0-8,0	(2,0-10,0) (7,0-15,0)		Observations	
End stop	180 300	min. 40 max. 40				
2.4 Solenoid	max cut-in vo	tage XXX min.		i		

Test Specifications
Distributor-type
Fuel-injection Pumps

40

WPP 001/4 STE 6,5d

1. Edition

En

VE 6/12 F1100 R 122 O 460 426 029 supersedes company Steyr engine. WD 612.87

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

mm

see VDT-W-460/

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	800	4,8-5,2	mm		
1 2 Supply pump pressure	800	5,8-6,4	bar (kgf/cm²)		1
1 3 Full-load delivery without charge-air pressure	1080	80,8-81,8	cm ³ /1000 strokes	:	3,5
Full-load delivery with charge-air pressure	-	-	cm ³ /1000 strokes		
1.4 idle speed regulation	300	14,0-18,0	cm ³ /1000 strokes		3,5
1 5 Start	100	min. 95,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1200	11,0-17,0	cm ³ /1000 strokes	1	
1.7 Load-dependent start of delivery				•	

mm 500 mm 1,3-2,1(1,0-2,4)		800 (4,3-5,7)		1080 (6,6-8,0)
n = rev/min bar (kgf/cm²)	500 4,3-4,9			1080 ,2-7,8
n = ney/min cm ³ /10 s	500 55-138(40-153)			1100 40-153
			3. Dimer	ISIONS for assembly and adjustment
Rot. speed rev/min	Fuel delivery cm3/1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm
1250 1200	max. 1,0 (9,0-19,0)		K	3,2-3,4
1150 1080	45,5-54,5 (45,0-55,0) (78,0-84,3)		KF	5,7-6,0
1000	80,0-82,0 (78,0-84,0)		MS	1,5-1,5
	mm n = rev/min bar (kgf/cm²) n = rev/min cm³/10 s Rot. speed rev/min 1250 1200 1150	mm 1,3-2,1(1,0-2,4) n = rev/min 500 4,3-4,9 n = rev/min 500 cm ^{3/10 s} 55-138(40-153) Rot speed rev/min cm ^{3/1000} strokes 1250 max. 1,0 1200 1150 45,5-54,5 (45,0-55,0)	mm 1,3-2,1(1,0-2,4) (4,3-5,7) n = rev/min bar (kgf/cm²) 500 4,3-4,9 n = rev/min cm³/10s 55-138(40-153) Rot. speed Fuel delivery cm³/1000 strokes 1250 max. 1,0 1200 (9,0-19,0) 1150 45,5-54,5 (45,0-55,0)	mm 1,3-2,1(1,0-2,4) (4,3-5,7) 6,9-7,7(n = rev/min 500 4,3-4,9 7 n = rev/min 500 55-138(40-153) 55-138(40-153) Rot. speed Fuel delivery cm ³ /1000 strokes Prov/min 1250 max. 1,0 (9,0-19,0) 1200 (9,0-19,0) KF

2.4 Solenoid	max. cut-in volta	Q o					
End stop	180 280	min. 100 max. 75		Particular and the second seco			
idle stop	450 350 300	max. 1,0 0,5-6,5	(11,0-21,0)		Observations		-
switch-off	1100	0			A B		
	50 0	78,5-81,5	(78,0-84,0)		SVS	max.6,0	

BOSCH

test voltage

VA 6/10 H 1150 CR 87-3 O 460 306 260

Testoil-ISO 4113

supersede 9.83 company IHC engine D 358

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 R

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

VDT-WPP 161/4 B
Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ³
1.1 Timing device travel	700	2,4-3,2	mm		
1.2 Supply pump pressure	700	4,9-5,4	kp/cm²	•	1
1.3 Full-load delivery without charge-air pressure	700	69,5-70,5	cm ³ /1000 strokes		3,0
Full-load delivery with charge-air	-	-	cm ³ /1000 strokes	•	
pressure 1 4 Idle speed regulation	400	16,0-22,0	cm ³ /1000 strokes	P T	3,0
t 5 Start	100	min. 70,0	cm ³ /1000 strokes	1	
1.6 Full-load speed regulation	1200	36,0-44,0	cm ³ /1000 strokes	:	

2. Test Sp 21 Timing device	ecificati	Ons Checking values in brackets 500 0,6-1,6(0,4-1,8)	/00 (2,1-3,5)	1150 5,2-5,9(4,8-6,2)	
22 Supply pump	rev/min	200 2,1-2,6(1,9-2,8)	700 (4,7-5,6)	1150 6,6-7,1(6,4-7,3)	
Overflow delivery	rev:min cm ³ /10 s	:			

2.3 Fuel deliverie	S
--------------------	---

	Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm
1	End stop	Full	1250-1300	0		!
1	•		1200		(34,0-46,0)	
			1150	70,0-73,0	(69,0-74,0)	, ;
1			700		(69,0-71,0)	
1 1 1 1			500	66,0-70,0	(65,0-71,0)	• • • • • • • • • • • • • • • • • • •
-			,			
		Stop	1150	0		
	idle stop	Full	530-580	0		
			400		(14,0-24,0)	
		Start	100	min.70,0		
	!	1	•	1	<u>.</u>	

Angle to the stop-plate	Pre-setting dimensions						
Pump α = 25 ± 4° β = 42 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump = 3,8 Dimension IV = 24,65 mm						

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,0 o 2

1. Edition

PES 5 M 55 C 320 RS 108-1 RSF 350/2300 M 16 Komb. Nr. 0 400 075 987

Sales model

0 400 075 988

supersedes

company Daimler Benz

OM 617

65 KW (88 PS)

1 - 2 - 4 - 5 - 3 0 - 72-144-216-288 + 0.50 (0.75) All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

③

2,20-2,30 (2,15-2,35)

mm (from BDC)

20 mm

Control rod travel

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Soring pre-tensioning (Compensating valve)
rev/min	mm 2	cm ³ /100 strokes	cm ³ /100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1000	13,9 ⁺⁰ ,	3,9 - 4,0	0,25 (0,3)			
350 1800 2200	6,5-6,7	0,6 - 0,7	0,1 (0,15) 0,25 (0,3) 0,25 (0,3)		1	

Set uniform delivery according to the values in

Checking values in prackets

B. Governor Settings

Lower rated sp	eed		Upper rated sp	eed		Variations in control rod travel			
Degree of deflection of control	Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed	:	-Rotational -speed	Control rod trave	
lever	mm	rev/min	lever	mm	revimin	•	rev min	mm	
1	2	3	4	5	6	.7	8	9	
9-13	min.10, max.10	1	50 🗇	13,0-13 9,1-9,		12	100 1800	min. 20,3 13,5-13,7	
3	6,5-6,7		9		-	14	• 1000	13,9-14,0	
(5)	2.5	780-820	(1)		2950	6	Switching p	oint	

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load d		Full-load speed 8a regulation	Variations delivery		Idle	tuel delivery	Difference
Test on ter revimin	np 40°C (104°F)	rev/min	rev/min	cm ³ /1000 strokes	revimin	cm³/1000 strokes	cm /1000 strokes
1	2	3	4	5	6	7	8
2200	39,5-41,5 (38,5-42,5)	2500* RW 9,1-9,5	1800	39,0-41,0 (38,0-42,0)	100	min. 53,0	6,0 2
	(30,3 +2,3)	1	1000	39,0-40,0 (38,0-41,0)	350	6,0-7,0 (5,5-9,0)	1,0 1,5 See (5
de control			# + # # # # # # # # # # # # # # # # # #		2500	(23,0-27,0 (22,0-28,0)	2,5 8 a (16)

nst Afz-Ausrustung ositaun 50-0-7000 Stuttgart f. Printed in the Federal Pepublic of Germana r. f. a.nause war Arbert Brisch, Dinom

Checking values in brackets

Ca. 4,0xxxxirol rod rave: man in Jolumn 2

- 1. ** Set the idle auxiliary spring at n = 385 min⁻¹ so that the control-rod travel is exceeded by 0.1 0.2 mm.
- 2. Setting the idle control-lever position:

 At 1000 min⁻¹, control rod travel 1.9 2.0 mm
- Control-lever position 47°. After change-over point up to 550 min⁻¹ no change in control-rod travel. Control-lever position 30°. Speed range 350 min⁻¹ 450 min⁻¹
- 4. Check the pneumatic shutoff box

Control lever at idle stop. At $n = 375 \text{ min}^{-1}$ and pu = 450 mbar (vacuum) (338 mmHg) the control rod must return quickly to control-rod travel = 0 mm.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,0 o 1

1. Edition

PES 5 M 55 C 320 RS 108-1 RSF 350/2300 M 15

Komb. Nr. 0 400 075 991

Sales model

0 400 075 989

supersedes -

company Daimler-Benz

OM 617 (65 KW) engine

1 - 2 - 4 - 5 - 3

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,20-2,30 (2,15-2,35)

mm (from BDC)

20 mm

Control rod travel

Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
2	3	4	2	3	6
13,9 ⁺⁰ ,1	3,9 - 4,0	0,25 (0,3)		1	
6,5-6,7	0,6 - 0,7	0,1 (0,15) 0,25 (0,3) 0,25 (0,3)			
	travel mm 2 13,9 ⁺⁰ ,	travel cm ³ /100 strokes 2 3 13,9 ⁺⁰ ,1 3,9 - 4,0	travel mm cm ³ /100 strokes cm ³ /100 strokes 2 cm ³ /100 strokes 4 $\frac{13.9^{+0.1}}{0.5^{-6.7}}$ $\frac{3.9-4.0}{0.6-0.7}$ 0.1 (0.15) 0.25 (0.3)	travel mm cm $^{3}/100$ strokes cm $^{3}/100$ strokes mm 2 2 13,9 $^{+0}$, 1 3,9 - 4,0 0,25 (0,3)	travel mm cm ³ /100 strokes cm ³ /100 strokes mm cm ³ /100 strokes 2 3 $13.9^{+0.1}$ 3,9 - 4,0 0,25 (0,3) $0.5-6.7$ 0,6 - 0,7 0,1 (0,15) 0,25 (0,3)

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

peed		Upper rated sp	eed		Variations in control rod travel		
Control rod travel	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed		Rotational speed	Control rod travel
mm	revimus	lever	កាពា	rev/min		revimin	mm
,2	3	4	5	6	17	8	9
min.10,	5 250	50	13,0-13	2 2200	13	100	min. 20,3
, ,			9.1-9.		\simeq	1800	13,5-13,7
6,5-6,7		\simeq	-	-	· ×	1000	13,9-14,0
) -	303	10	0-1,0	2950		Suitables	
2,5	720-820	l ŭ		\$ t	6	Switching p	Oint
	mm 2 min.10, max.10, 6,5-6,7	Control rod travel mm rev/min 2 3 min.10,5 250 max.10,0 300 6,5-6,7 350 385	Control rod travel Min. 10,5 250 50 7 max. 10,0 300 6,5-6,7 350 ** 385 9	Control rod travel mm rev/min 2 3 4 5 min.10,5 250 50 7 13,0-13 9,1-9, 6,5-6,7 350 9 0-1,0	Control rod travel mm rev/min 2 3 4 5 6 min.10,5 250 50 7 8,5-6,7 350 8 9,1-9,5 2500 6,5-6,7 385 9 10 0-1,0 2950	Control rod fravel Control rod fravel Min. 10,5 250 50 7 13,0-13,2 2200 9,1-9,5 2500 6,5-6,7 350 8	Control rod travel Control rod travel Control

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load d	letivery (19)	Full-load speed 8a regulation	Variations delivery	in fuel	Starting	fuel delivery		
Test oil ter	mp 40°C (104°F)		:	18		1	Difference	•
revimin	cm ² /1000 strokes	rev/min	revimin	cm /1000 strokes	(tev/min	cm ³ /1000 strokes	[cm ³ /1000	strokes
1	2	3	. 4	5	6	17	8	
2200	39,5-41,5 (38,5-42,5)	2500* RW=9,1-9,5	1800	39,0-41,0 (38,0-42,0		min. 53,0	6,0	(123)
			1000	39,0-40,0 (38,0-41,0	350	6,0-7,0 (5,5-9,0) 23,0-27,0	1,0 (1,5) 2,5	See
	. ¢	***	:		:	(22,0-28,0)		8 a

Dhecking values in brackets

Call mid #DEXXXX rad travel than in Quillinn 2

- 1. ** Set the idle auxiliary spring at $n = 385 \text{ min}^{-1}$ so that the control-rod travel is exceeded by 0.1 0.2 mm.
- 2. Setting the idle control-lever position:
 At 1000 min⁻¹, control rod travel 1.9 2.0 mm
- 3. Check the idle auxiliary spring shutoff

Control-lever position 47°. After change-over point up to 550 min⁻¹ no change in control-rod travel. Control-lever position 30°. Speed range 350 min⁻¹ - 450 min⁻¹

4. Check the pneumatic shutoff box

Control lever at idle stop.

At n = 375 min⁻¹ and pu = 450 mbar (vacuum)

(338 mmHg) the control rod must return quickly
to control-rod travel = 0 mm.

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 MB 1,8 r 4 1. Edition

PES 4 A 50 D 410 RS 1025

Komb.-Nr. 0 400 474 154

RSV 650-1200 A 5 B 729 L

supersedes

Daimler-Benz OM 636

34 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection yump Settings

Port closing at prestroke

estoil-ISO 4113

(1,65-1,85)

mm (from BDCF RW 9,0 - 12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ³ /100 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1180	13,6+0,1	2,9 - 3,0	0,2(0,25)			
650	9,9-10,1	1,1 - 1,2	0,15(0,2)			
			:			
	,					

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travet mm		Intermed				Lower rated speed Control- ver rev/min degrees Lower rated speed travel mm 9			Torque control Control rod travel rev/min mm 10 11	
loose	1000 x =	0,3-1,0 4,5	-	-	-	ca. 34	650 100 650	9,5 min.19,5 9,9-10,1	1180 400 500	13,6-13,7 14,5-15,1 13,6-13,8	
ca. 57	12,6 4,0 1450	1220-1230 1365-1395 0,3-1,7					865-92		300	13,0-13,0	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F)	Rotational- speed limitat		el delivery aractenstics	Starting f	uel delivery 5		stop
rev/min	cm²/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7		travel mm 9
1180	29,0 - 30,0 (28,0 - 31,0)	1220-1230*	-	-	-	-	-	•

Checking values in brackets

* 1 mm less control rod travel than col 2

4.83

Geschaftsbereich KM Kundendienst Kfz Ausrustung.

1980 by Robert Bosch GmbM. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en Republique Federale d Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps (1A)

WPP 001/4 MWM 6,2 e

1. Edition

PES 6 A 90 D 320/3 RS 2660

RSV 325-1500 A 2 B 505 - 2 R

supersedes

Komb.-Nr. 0 400 866 112

D 226-6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,95-3,05

Testoil-ISO 4113

(2,90-3,10)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod - travel mm 2	Fuel delivery cm4100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1500	10,5+0,1	9,0 - 9,1	0,3 (0,5)			
325	6,4-6,6	1,1 - 1,7				
	_					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper	rated speed	rev/min	Intermed	hate rated	speed	(1)		rated speed	1 4	rque control
Degree of	Control rod	Control rod travel				Control-		Control rod travel		Control rod travel
deflection of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
lever 1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	1	-	-	ca. 27	325	6,0	-	-
10036	x =	5,5					325	6,4-6,6		
ca. 66	9,5	1540-1550					460-52	0 = 2,0		
	4,0	1615-1645								
23	1780	0,3-1,7					·			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop	speed limital Characteristics			Starting fuel delivery 5 delivers top Idle			
rev/min	cm ³ /1000 strokes	Note changed to .) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm=/1000 strokes 7		Control rod travel mm 9
1500	89,5 - 90,5 (87,5 - 92,5)	1540-1550*	-		100	19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

4.83

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fedérale d'Allemagne par Robert Bosch GmbH.

Test Specifications
Fuel Injection Pumps (1)
and Governors

WPP 001/4 MAN 17,4 b 1

1. Edition

PE 10 P 120 A 520/4 LS 850

RQV 250-1150 PA 647

1-8-7-6-3-5-2-10-9-4 0-27-72-99-144-171-216-243-288-315°-0,5° (+0,75°) company:MAN

engine: D 2540 MLE 405 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		2.95-3.15)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strok es 3	mm 6
1150	11,2+0,1	18,5-18,8	0,4(0,9)			
250	6,2-6,4	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated : Degree of deflection of control lever	rev/min Control rod travel mm	Control rod (a) travel (mm rev/min (28)	Intermediate Degree of deflection of control lever	rated sp rev/min 5	Control rod travel mm	Lower rated Degree of deflection of control lever 7	speed Control rod travel rev/min mm 3 9	Sliding sleeve travel rev/min mm 10 11
max. ca. 63	1200 10,2 4,0 1400	15,2-17,8 1190-1200 1255-1285 0-1,0	-	-	-	ca. 12	100 min.7,8 250 6,2-6,4 410-470=2,0	200 0,6-0,8 520 4,9-5,2 830 6,1-6,4 1150 7,5

Torque control travel a =

шш

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	ery characteristics 5a	Starting Idle switchin		Torque- travel	control 5
rev/mm	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1-	2	3	4	5	6	7	8	9
LDA 1150	1,0 bar 185,0-188,0 (182,0-191,0)	1190-1200*	LDA 500	0 bar 119,0-122,0 (116,0-125,0		205,0-225,0	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

BOSCH

Beschäftsbereich KM. Kundendienst. Kfz-Ausrustung. - by Robert Bosch GmbH. D-7 Stuttgart 1, Positach 50 Printed in the Federal Redublic of German morme en Republique Federsle d Allemagne par Robert Bosch GribM.

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

MAN 17,4 b 1

-2-

pressure = bar mm (1) .
0 0,65 0,54 11,2-11,3 9,6-9,7 10,8-10,9 10,0-10,3

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

K18

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MB 14,6 o and Governors 2. Edition En

PE 8 P 120 A 320 LS 3816 ROV 350-1150 PA 590 1-8-7-2-6-3-54 je $45^{\circ}\pm0.5^{\circ}$ ($\pm0.75^{\circ}$) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersed 60.82 company Daimler Benz engine. OM 422 A 243 kW (330 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at pres	troke	(3.95-4.15)	mm (from BDC)			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150 350	11,0+0,1 4,9-5,1		0,5(0,9) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control	Control rod (a travel	Idesection	rated sp	control rod travel	Lower rated Degree of deflection	speed	Control rod travel	Sliding s	loove travel
	rod travel mm 2	rev/min 2a	of control lever	rev/min	mm 4	of control lever 7	rev/min 8	mm 3	rev/min	mm 11
max.	1150	15,2-17,8	-	-	-	ca. 10	100	min.6,0	300	0,6-0,9
ca. 63		1190-1200 1270-1300 0 - 1,0				370-480	350		580 870 1150	3,6-3,8 5,2-5,4 7,6
						39				

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 20 limitation intermediate speed		rery characteristics (5a)	Starting idle switchir	. •	Torque- travel	Control rod
rev/min 1	crh³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes 5	rav/min 6	cm ³ /1000 strok es 7	rav/min 8	travel mm
LDA 1150	0,7 bar 158,0-160,0 (155,0-163,0)		LDA 600 LDA 500	0,7 bar 166,0-172,0 (163,0-175,0 0 bar 140,0-142,0 (137,0-145,0		140,0-160,0	850	11,0+0, 11,4+0, 11,5+0,

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

50C

rev/min decreasing pressure ~ in bar gauge pressure

MB 14,6 o

-2-

			1.5 11,00
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 3816 +PA 590	0,47	0,70 0 0,40	11,4-11,5 11,6-11,7 10,5-10,6 10,9-11,0

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 d 1 3. Edition

En

PE 6 P 120 A 320 RS 3050

ROV 250-1100 PA 611

supersedês 82 compan Vol vo engine: TD 120 F

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.35-2.55) mm (from BDC) = RW 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,1+0,	1 24,2-24,5	0,5(1,9)			2,5 [±] 0,1
250	3,8-4,0	2,2-2,6	0,5(0,7)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed		Lower rated	speed			Sliding s	leeve travel
	rev/min Control	Control rod travel	(a)	Degree of deflection		Control root travel	•	Degree of deflection		Control :	rod		ı ①
	rod travel mm	mm rev/min	(2a)	of control lever	rev/min	mm	(•)	of control lever	rev/min	mm	3	rev/min	mm
1	2	3		4	5	6		7	9	9		10	11
max.	1180	15,2-17	,8	-	-	-		ca. 7	100	min.	5,3	200	0,7-0,9
ca. 65	12,1 4,0 1350	1160-11 1225-12 0 - 1,	55		,					3,8-4 350°=2,		500 660- 1040 1100	4,2-4,8 6,4-6,6 7,3
						1		3					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 20 ilmitation intermediate speed	Fuel deliv	ery characteristics 5a paed 5b	Starting idle switchir	. •	Torque- travel	Control rod
rev/mm	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm mm
1	2	3	4	5	6	7	8	9
LDA 700	1,2 bar 241,5-244,5 (238,5-247,5)		LDA 700	0 bar 142,5-146,5 (139,5-149,5	100	20.0-21,0 mm RW	-	•

Checking values in brackets

*1 mm less control rod travel than col. 2 1.83

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n ≃

500 rev/min decreasing pressure - in bar gauge pressure

VOL 12,0 d 1 -2-

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3050 + RQV PA 611	0,67	1,2 0 0,30	12,2-12,3 13,1-13,2 9,2- 9,3 10,5-10,7

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 8,8 d 1

1. Edition

PES 6 P 120 A 320 RS 419 RQV 275-1100 PA 495

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes

company: RVI

engine: MiDR 062045 206 kW (280 PS)

> Komb.-Nr. 0 402 046 249

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)	
rey/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	កាកា 2	cm ³ /100 strokes 3	mm 6	
1100	10,3+0,1	17,7 - 18,1	0,4(0,8)				
275	3,4-3,6	0,5 - 1,1	0,4(0,7)]	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

0.00	rev/min	Control rod (1	Intermediate Degree of	rated sp	Control rod	Lower rated Degree of	speed	Control rod	Sliding s	deeve travel
of control	Control rod travel mm 2	travel mm rev/min 2	deflection of control lever	rev/min 5	mm 4	deflection of control lever 7	rev/min 8	mm 3	rev/min	mm 11
max.	1150	15,2-17,8	-	-	-	ca. 8	100 275	min.5,0 3,4-3,6		1,0-1,2
ca.64	9,3 4,0 1350	1155-1165 1220-1250 0 - 1,0				280-395		10,1 0,0		5,9-6,1 8,1
						3				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2b)	Fuel delivingh idle s	rery characteristics (5e poed (50)	Starting Idle switchir	. •	Torque- travel	control (5)
rev/mm	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm tr avet
1	2	3	4	5	6	7	8	9
LDA 1100	0,7 bar 177,0-181,0 (174,0-184,0		LDA 700	0,7 bar 163,0-196,0 (160,0-172,0		130,0-150,0	•	_

Checking values in brackets

*1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

- 2 -

Testat n =

500

revimin decreasing pressure - in bar gauge pressure

RVI 8,8 d 1

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 PRS 419 + RQVPA 495	0,25	0,70 0 0,20	9,7 - 9,8 10,3 - 10,4 8,3 - 8,5 8,8 - 9,0

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 SCA 8,0 1 2. Edition

En

PE 6 P 110 A 720 RS 3076 Komb.-Nr. 0.401 876 721 RSV 350-1200 P1/462

supersedes Scania company D S 8 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,3-3,4 (3,25-3,45)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/miñ	mm (2)	cm1/100 strokes	cm ³ / 100 strokes	mm	cm:/100 strokes	пm
1	2	3	4	2	3	6
850	11,9+0,1	12,1-12,3	0,4(0,8)			2,5 [±] 0,1 (2,2 - 2,9)
						(2,2-2,9)
		•				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe	r rated speed	rey/min	Interme	diate rated	speed	(4)	Lawe	rated speed	(3) 10	rque control
Degree of deflection of control lever	Control rod travel .mm	control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	800	0,3-1,0	_		-	ca.24	350	4,4	-	-
loose		,0		_		Ca.24	100 350	min.20,0 4,8-5,0		
Ca.62	10,9 4,0 1450	900-905 935-945 0,3-1,7						.,		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	all load stop emp 40°C (104 F)	6 Actational speed limitat		en delivery paracteristics	Starting fidle	uel delivery 5	43 igt	e stop Control rod
rev/min	cm: 1000 strokes	changed to > revirmin	revimin 4	cm=1000 strokes 5	rev/min	cm=/1000 strokes 7	es/min	travel mm 9
850	121,0-123,0 (119,0-125,0)	900-905*	-	-		190,0-249, 20,0- 21,0 mm RW		-
	3		1					

Checking values in brackets

1 mm less control rod fravel than col. 2

6.33

BOSCH

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BET 8,8 a

2. Edition

PE 6 P 120 A 320 RS 383

①

Testoil-ISO 4113

RQV 250-1200 PA 425 R

supersedes 2 . 82 company: RVI

MIDS 062030 165,5 kW (225 PS)

Komb.-Nr. 0 401 846 404

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/109 strokes 3	mm 6
1200	13,9+0,1	14,8 - 15,1	0,5(0,9)			
275	4,7-4,9	0,8 - 1,4	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	oe d		Lower rat	bed	speed			Slidings	Sliding sleeve travel	
deflection	rev/min Control	Control rod travel	•	Degree of deflection		Control ro	d	Degree o	n		Control r	od	Cilcuity	1	
of control lever	rod travel	mm rev/min	2	of control lever	rev/min	mm	•	of contro	•	rev/mm	mm	(3)	rev/min	mm	
1	2	3		4	5	6		7		3	9		10	11	
max.	1240	15,2-17	,8	-	-	-		ca. 1	2	100 275	min.6		200 530	0,2-0,6 2,9-3,1	
ca. 66	12,9 4,0 1500	1340-13								2/3	4,/-	r, 3	870 1200	4,8-5,0 8,0	
								3 a							

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten	1 stop np. 40°C (104°F) 2	Rotational-speed (2b) Fuel delivery characteristics (5e) Immtation (10 mg/s) and (10 mg/s) (10 m			Starting Idle switchin		Torque- travel	Control od travel
rev/min	crh3/1000 strokes	rev/min	rev/mm	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 1200	0,7 bar 148,0-151,0 (145,0-154,0		LDA 700			120,0-140,0 = RW 19,5 - 21,0 mm	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

BET 8,8 a - 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm (1)
	Gauge pressure = bar	Gauge pressure = bar	(1)
PE 6 PRS 383 + RQVPA 425 R	0,23	0,70 0 0,19	13,4 - 13,5 13,9 - 14,0 12,2 - 12,3 12,6 - 12,8

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BRE 9.6 c

1. Edition

PE 6 P 120 A 320 RS 461

RQV 300-1500 PA 500

supersedēs Breda companyID 32 engine: 243 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

Komb.-Nr. 0 401 846 478

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	roke (3	45-3.65)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm³/100 strokes ଓ	mm 6
1500	10,0+0,1	14,5-14,9	0,5(0,9)			
300	7,1-7,3	1,5-2,1	0,8(1,2)			
			1			

Adjust the fuel delivery from each outlet according to the values in |

B. Governor Settings

Upper rated	speed			Intermediate	Intermediate rated speed			speed	Slidina	Sliding sleeve travel	
Degree of deflection of control	rev/min Control rod travel		(a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		l ①
lever	mm 2	rev/min	(29)	lever	rev/min	mm (4)	16 V6 F	rev/min	mm (3) rev/min	11
-	2	3		-	3	0	'		9	1	
max.	1500	15,2-17,	8	-		-	ca.14	100	min.8,7	250	1,0-1,2
								300	17,1-7,3	670	3,8-4,0
ca. 62	9,0	1540-15								1080	5,9-6,1
	4,0	1625-16					25 450			1500	8,8
	1750	0 - 1,	U				335-450	_		1	
							3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		antenness speed	Fuel deliv	rery characteristics (5e)	Starting Idle switchir	. •	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rav/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1500	145,0-149,0 (142,0-152,0		•	-	100	19,5-21,0 mm RW	•	-

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BRE 30,8 a

1. Edition

PE 8 P 130 A 520/6 LS 450

ROV 300-900 PA 500

1-2-6-3-4-5-7-8 je 45° $^{+}_{-}0,5^{\circ}(^{+}_{-}0,75^{\circ})$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes **

companyBreda

engine: ID 36 N 8 V

A. Fuel Injection Pump Settings

Komb.-Nr. 0 401 838 020

3,5-3,6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	9,2-9,3	16,5-16,8	0,5(0,9)			
300	6,8-7,0	2,2-2,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	Sliding s	Sliding sleeve travel	
	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control	rod travel	mm rev/min 2a	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	990	15,2-17,8	-	-	-	ca.16		min.8,4 6,8-7,0	250 470	1,0-1,3 3,8-4,4
ca. 57	8,2 4,0	940-950 1000-1030					300	10,0-7,0	680 900	5,6-5,8 7,6
	1150	0-1,0				300-395				
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel daliv	ery characteristics 5e peed 50	Starting Idie switchin	. •	Torque-control 5 travel Control rod	
rev/min		rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
900	165,0-168,0 (162,0-171,0)	940-950*	-	-	100	19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BRE 9,7 a

1. Edition

PE 6 P 120 A 320 RS 460 RQV 300-1500 PA 500

1- 2- 3 - 4 - 5 - 6 0-45-120-165-240-285 ° - 0,5 ° (- 0,75 °) supersedes Breda company 38 engine: 367,5 kW

> Komb.-Nr. 0 401 846 477

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
നന 2	cm³/100 strokes 3	100 strokes 4	mm 2	cm*/100 strokes	mm 6
10,0+0,1	14,6-14,9	0,5(0,9)			
7,8-8,0	1,4-2,0	0,8(1,2)			
	mm 2 10,0+0,1	cm³/100 strokes 2 3 10,0+0,1 14,6-14,9	travel cm ³ /100 strokes cm ³ / 100 strokes 2 3 10,0+0,1 14,6-14,9 0,5(0,9)	travel travel cm³/100 strokes cm³/ 100 strokes mm 2 2 3 4 2 2 10,0+0,1 14,6-14,9 0,5(0,9)	travel cm³/100 strokes cm³/ 100 strokes mm cm³/100 strokes 2 3 10,0+0,1 14,6-14,9 0,5(0,9)

Adjust the fusi delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed			Intermediate	rated sp	eed		Lower rated	speed	•	Sliding s	Sliding sleeve travel	
Degree of deflection	rev/men Control	Control rod travel	(a)	Degree of deflection		Control r travel	od	Degree of deflection		Control rod travel		. ①	
of control lever	rod travel	rev/min	(28)	of control lever	rev/min	mm	•	of control lever	rev/mw	mm · 3	rev/min	mm	
1	2	3		4	5	6		7	8	9	10	11	
max.	1500	15,2-1	7,8	-	-	-		ca.18	100 300	min.9,4 7,8-8,0	1	1,6-1,8 4,0-4,2	
ca.63	9,0	1540-1									1080 1500		
	4,0 1750	1625 - 1	655 ,0					335-440			1300	9,1	
	•							3					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deliv	ery characteristics 5e	Starting idle switching	. •	Torque-control (travel	
rev/min	cm³/1000 strokes .	rev/min 49	rev/min	cm ³ /1000 strokes		rev/min cm³/1000 strokes		travel mm
1500	146,0-149,0 (143,0-152,0	1540-1550*)		-	100	19,5-21,0 mm RW	83	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

2.83

BOSCH

eschaftbersich KH. Kundendienst. Kit: Ausrustung. By Robert Bosch GmbH. D-7 Stutigant 1, Pastrach 50. Printed in the Federat Republic of Germany. Name of Republic Federate d Afemagna par Robert Bosch. GmbH.

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BRE 23,1 a
1. Edition

En

PE 6 P 130 A 320/3 LS 449

RQV 300-900 PA 500

1 - 6 - 5 - 4 - 3 - 2 0 -75 -120-195-240-315° ± 0,5° (± 0,75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
Alters appendications are valid for British Injection Pump Test Benches and Testers 0 40

supersedes Breda company ID 36 N 6 V engine: 225 kW

Komb.-Nr. 0 401 836 022

A. Fuel Injection Pump Settings

Port closing at prestroke (3,45-3,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 8
900	9,2-9,3	16,5-16,8	0,5 (0,9)			
300	6,8-7,0	2,2-2,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Clicting o	iceve travel
deflection	Control	Control rod (a)	Degree of deflection of control		Control rod travel	Degree of deflection		Control rod travel	Silding s	1
	rod trave	rev/min ②a		rev/min	mme 4	of control	rev/min	mm 3	rev/min	m n
1	2	3	4	5	6	7	8	9	10	11
max.	990	15,2-17,8	-	~	-	ca. 16		min. 8,4	250	1,0-1,3
ca. 57	8,2	940-950					300	5,8 - 7,0		3,8-4,4
		1000-1030				205			680	5,6-5,8
	1150	0-1,0				B00-395			900	7,6
1							l			
						3				

Torque control travel a =

rt m

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deliv	ery characteristics (5a)	Starting idle switching		Torque- travel	Control rod	
rev/min	cft ³ /1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm	
900	165,0-168,0	940-950*	-	•	100	19,5-21,0	-	9	
	(162,0-171,0)							

Checking values in brackets

* 1 mm less control rod travel than col. 2

0

restoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MAN 17,4 b 2 and Governors

1. Edition

PE 10 P 120 A 520/4 LS 850

ROV 250-1150 PA 645

supersedes compan MAN

1-8-7-6-3-5-2-10-9-4

0-27-72-99-144-171-216-243-288-315° ±0.5° (± 0.75°)

engine: D 2540 MLE 405 kW (551 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubil Declications are Villo 167 Boach Fuel Injection Pump Test Benches and Testers

0 401 849 165

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC) Zy1. 10

	7.93-3.131						
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)		
mm	cm ³ /100 strokes	100 strokes	mm C	cm ³ /100 strokes	mm		
2	3	•	2	3	9		
11,2+0,1	18,6-18,9	0,5(0,8)					
6,1-6,3	1,4-2,0	0,8(1,2)					
	Control rod travel mm 2 11,2+0,1	mm cm ³ /100 strokes 2 3 11,2+0,1 18,6-18,9	Control rod braves mm cm³/100 strokes 2	Control rod bravel mm cm³/100 strokes 2 11,2+0,1 18,6-18,9 Difference con¹/100 strokes mm 2 0,5(0,8)	Control rod bravel mm cm³/100 strokes 2 11,2+0,1 18,6-18,9 Difference cm³/ 100 strokes mm cm³/100 strokes 2 0,5(0,8)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	pood			Intermediate	rated spe	bed		Lower	rated	speed			Sliding s	leeve travel
deflection	rev/min Control rod travel	mayer (Degree of deflection of control		Contro travel	rod	Degree deflecti of contr	ion		Contro travei	Control rod		0
lever		rev/min (- 11		rev/min	mm	•	lever		rev/min	mm	(3)	rev/min	mm
1	2	3	-	4	5	6		7		8	9		10	11
max.	1200	15,2-17,	8	-			•	ca.	11		min.			0,6-0,8
Ca. 63		1190-1200 1255-1280 0'- 1 ₂ 0	5							250 380-4		-6,3 2,0		4,8-4,9 5,9-6,2 7,9
		·	,					(3)				<u>-</u>		

Torque control travel a

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di Control-roo Test oil ten	stop	Rotational-speed 20 limitation intermediate speed	Funt delivingh idle s	rery characteristics (5e) peed (5e)	Starting Idle switchir		Torque- travel	control (5) Control rod
rev/min	criti ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1150	186,0-189,0 (183,0-192,0	1190-1200 *)	•	-	100	270,0-290,0	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications 0 Fuel Injection Pumps (1)-P 001/4 FIA 13,8 a 7 and Governors

1. Edition

ROV 225-1100 PA 337 R PE 6 P 120 A 720 RS 167

supersedes -

company: Fiat

221 A/8210.02.022

184 kW

Komb.-Nr. 0 401 846 361

0 401 846 454

assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067. All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Values only apply to test nozzle-and-holder

A. Fuel Injection Pump Settings

Rotational spaed 'ev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	10,7+0,1	16,8 - 17,1	0,5(0,9)			
225	7,5-7,7	1,7 - 2,3	0,8(1,2)			

B. Governor Settings

Testoil-IS/O 4113

Upper rated s	peed		Intermediat	e rated sp	eed		Lower rated	speed		Slidina s	ieave travel
	rev/min Control	Control rod (travel	Degree of deflection		travel def		Degree of deflection		Control rod travel		. ①
	rod travel mm	mm rev/min (2	of control	rev/min	mm (①	of control lever	rev/min	mm (rev/min	mm 11
1	2	45 0 47		13	10		22 42	460	nic 0 4		
max.	1100	15,2-17,	8 -	-	-		ca.13		min.9,1 7,5-7,7		0,7-0,8 2,7-3,0
ca. 60	9,7	1140-115	ما					223	17,5-7,7	800	4,6-4,9
ca. 60	4,0	1200-123					295-410			100	8,0
	1350	0 - 1,	-								
							③				

Torque controi travel a

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load its Control-roo Test oil ten	1 stop	intermediate speed			Starting Idle switching	. •	Torque- travel	Control Control
(SALVALIS)	cm ³ /1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rgv/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1100	168,0-171,0 (165,0-174,0)		-	•	100	19,5-21,0 mm RW	•	•

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BAO 15,9 a

Edition

PES 6 P 130 A 320 RS 3093

RQV 350-900 PA 618

supersedes

company: Baudouin
6 P 15-SRCE
engine: 295 kW

Komb.-Nr. 0 402 046 730

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strok es 3	100 strokes	mm 2	cm ³ /100 strok es 3	നന 6
900	11,7+0,1	32,8-33,2	0,5(0,8)			
350	3,9-4,1	20,0-2,6	0,8(1,2)			
						•

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed			intermediate	rated sp	ed		Lower rated	speed		Sliding s	iseve travel
deflection	rev/min Control	Control rod travel	(9)	Degree of deflection of control		Control re travel	od	Degree of deflection of control				0
	rod travel	rev/min	2	lever	rev/min	mm	•	lever	rev/min	mm 3	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
max.	950	15,2-17,	8	-	-	-		ca. 22		min. 5,5		0,7-1,0
ca. 60	10,7 4,0	940-950 1000-10						350-4 50	350	13,9-4,1	500 700 900	3,1-3,8 5,5-5,9 8,0
								3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b imutation intermediate speed	Fuel delivinghide s	rery characteristics (56)	Starting idle switching	. •	Torque-control (5 travel Control ro		
rev/min	cm³/1000 strokes	rev/min 44	חוניליאסז	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
900	328,0-332,0 (325,0-335,0		•	-	100	19,5-21,0 mm RW	•	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

0

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 8,1c

En 1. Edition

PES 6 MW 90/720 RS 1005 RQV 300-1300 MW 9 DR 0 403 446 107 company: iat engine: 8360.05.670 117,7 kW (160 PS)

Festoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke 1	5,10-5,20 5,05-5,25)	mm (from BDC)	RW = 5.0	mm	
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tens.oning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
1300	11,7+0,2	8,9-9,1	0,3(0,5)			
300 800	3,8-4,0 12,4+0,2		0,3(0,5) 0,3(0,5)			
						Ì

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Slidina s	leeve travel
	rev/min Control rod travel mm 2	Control rod (g) travel mm rev/min (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mma 11
max.	1300 1480	15,2-17,8 0-1,0	-	-	-	ca.21	300 100	3,8-4,0 nin.7,0		
ca.60°	10,8 4,0	1350-1360 1420-1460					350-	390=2,0		
						39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Control-ro	ntrol-rod stop t oil temp. 40°C (104°F) (2) Immitation intermediate speed				Starting Idle switchin	. •	Torque-control (stravel		
rev/min cht²/1000 strokes		rev <i>im</i> in 40	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travet mm	
1300	89,0-91,0 (88,0-92,0)	1350-1360*	800	89,0-91,0 (88,0-92,0)	100	20,0-21,0 (min. 130)	900 1200	12,4+(11,7+(

Chucking values in brackets

* 1 mm less control rod travel than col. 2

US-RQV 300/600-1050 PA 586-2K supersedes 3.83 $PLE-Ma\beta = 0,740" - 0,820"$

Note VDT-I-MAC 002!

EM 6 - 285

Values only apply to test nozzle-and-holder assembly 0 681 343 009 285 PS and fuel-injection test tubing

1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,75-2,95) mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	cm³/		Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	13,4+0,1	21,2 - 21,4	0,4			
300	5,3-5,5	2,0 - 3,0	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	rev/min	Control rod	Intermediate	e rated sp	eed Control rod	Lower rated speed Degree of Control rod			Sliding sleeve travel		
deflection of control lever	Control rod travel mm	travel	deflection of control lever	rev/min	mm 4	deflection of control lever 7	rev/min	mm 3	rev/min	mm 11	
max.	1120	15,2-17,	8			ca.20	250 300	9,8-11,3 7,9-8,1			
ca.62	12,4 4,0 1240	1090-110 1185-121 0 - 1,	5			38	400 690-7	3,8-5,2 750 = 2,0			

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Yest oil ter		Rotational-speed 2b ilimitation intermediate speed	Fuel deliv high idle s	ery characteristics 5a peed 5b	Starting idle switchir		Torque- travel	Control Control rod
rev/min cm³/1000 strokes		rev/min 4a	rev/min cm³/1000 strokes		rev/min	cmil/1000 strokes	rev/min mm	
1	2	3	4	5	6	7	8	9
1000	211,5-213,5	1090-1100*	600	213,0-216,0 242,0-245,0 PLE 147,0-155,0	100	110,0-170,0	1050 1000 800 700 600 500	13,4 13,8+0, 14,5+0, 14,9+0,

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 KHD 40,5 a 3

1. Edition

PE 8 P 120 A 920/5 RS 293

RS 250/1000 P 1/422 R

1 - 6 - 4 - 5 - 8 - 3 - 2 - 70 - 75-90 -120-210-225-315-345 ° -0,5° (-0,75°)

company BA 16 M 816 Komb.-Nr. 0 401 878 096

Spring pre-tensioning

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) = RW 9,0-12,0 mm

(1.95-2.15)Port closing at prestroke Control rod

Rotational speed rev/min	travel mm 2	cm ³ /100 strokes	cm³/ 100 strokes	trav el mm 2	cm ³ /100 strokes 3	(torque-control valve) mm 6
750	14,9+0,1	31,0-31,4 (30,7-31,7)	0,5 (0,9)			
250	6,3-6,5	2,2-2,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Festoil-ISO 4113

	deflection of control mm rev/min			hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 Tol	rque control Control rod travel . mm
loose	800 x =	0,3-1,0 5,0	-	-	-		250 390 - 4	6,4 50=2,0	1000 420 550	14,9-15,0 16,2-16,8 14,9-15,0
VHca.58	13,9 4,0 1200	1040-1050 1105-1135 0,3-1,7			•	150-200				-

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil temp 40°C (104°F) rev/min cm³/1000 strokes 1		Rotational- speed limitat Noter changed to) rev/min 3		el delivery aractenstics cm ³ /1000 strokes 5	Starting for Idle rev/min	cm ³ /1000 strokes		Stop Control rod travel mm
	Carry out adju	1040-1050* tment on en	- gine	-	100	19,5-21,0 mm RW	-	•
							<u> </u>	

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 KHD 40,5 a 2

1. Edition

PE 8 P 120 A 920/5 RS 293 RSUV 300-750 P 9 A 322 1 - 6 - 4 - 5 - 8 - 3 - 2 - 7 0 -75 -90 -120-210-225-315-345° -0,5° (-0,75°)

supersedeRHD company BA 16 M 816 eROMb.-Nr. 0 401 878 083

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1.95-2.15)

= RW 9,0-12,0 mm

Ciosing at p	esiloke /	7370	-,/	(
ational	Control rod	Fuel d	elivery	Difference

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
ten/win	mm (2)	cm³/100 strokes	cm ³ / 100 strokes	mm	cm ² /190 strokes	mm
1	2	3	4	2	3	6
750	14,9+0,1	29,6-30,0 (29,3-30,3)	0,5 (0,9)			
300	6,1-6,3	2,2-2,6	0,8 (1,2)			
•						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	deflection travel travel of control mm mm rev/min		Intermed	hate rated	speed	Control- lever deflection in degrees 7 Lower rated speed travel (Control root trave) (mm)		Control rod travei mm	1 3 1	rque control Control rod travel mm 11 -
loose	800 x =	0,3 - 1,0 4,0	-	-	•	ca. 26	300 300 325-38	5,7 6,1-6,3	750 280 400	14,9-15,0 16,2-16,8 14,9-15,0
ca. 62	13,9 4,0 985	790-800 820-850 0,3-1,7					323-30	2,0	.00	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F) cm ² /1000 strokes	Rotational- speed limitat Note changed to) rev/min 3	el delivery aractenstics crh-/1000 strokes	Starting findle	cm ² /1000 strokes	rev/min	Control rod travel mm
Carry	out adjustment	790-800* on engine		100	19,5-21,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

L14

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 KHD 40,5 a 1 1. Edition

PE 8 P 120 A 920/5 RS 293

RSUV 300-600 P8A 322 R

supersedes:

KHD company

1 - 6 - 4 - 5 - 8 - 3 - 2 - 7 $0 - 75 - 90 - 120 - 210 - 225 - 315 - 345^{\circ}$ $\stackrel{+}{-}0,5^{\circ}$ $(\stackrel{+}{-}0,75^{\circ})$

BA 16 M 816 engine:

Komb.-Nr. 0 401 878 099

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(1.95-2.15)

mm (from 60C) = RW 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
600	14,9+0,1	29,0-29,4 (28.7-29.7)	0,5(0,9)			
300	5,9-6,1	2,1-2,7	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

B. Governor Settings tubing 1 680 750 067.

1 Uppe	r rated speed	rev/min	Interméd	ilate rated	speed	(A)	Lower	rated speed	1 3	rque control
Degree of deflection of contros lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
100se	800 x =	0,3-1,0 4,0	-	-	-	ca.30	300	5,5 5,9-6,1	600 220	14,9-15,0 16,2-16,8
ca. 65	13,9 4,0 825	640-650 660-690 0,3-1,7					310-370	= 2,0	350	14,9-15,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed irrutat	3a Fu	el delivery aracteristics	Starting fuel delivery 5 4a idle sto			stop Control rod
rev/min	cm=/1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strok es 5	rev/min 6	cm ³ /1000 strokes 7	s rev/min	travel mm 9
Carry	out adjustment	640-650* on engine			100	19,5-21,0 mm RW		
						;		

Checking values in brackets

1 mm less control rod travel than col. 2

5.83

Geschaftsbereich KH. Kundendienst Kfz Ausrustung.
1. 1980 by Robert Bosch GmbH. Postfach 50, 0-7060 Stuttgart 1. Printed in the Federal Republic of Germany imprime en Republique Federale di Allemagne par Robert Bosch GmbH.

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 39,7 c

1. Edition

PE 12 ZW 160/120 RS 1029/11 RQUV 300-1200 ZWA 51 R Komb.-Nr. 0 402 430 009 1 - 12-9 - 4 - 5 - 8 - 11-2 - 3 - 10-7 - 6 Replaces
Firm: MTU
Engine:331

 $0 - 45 - 60 - 105 - 120 - 165 - 180 - 225 - 240 - 285 - 300 - 345^{\circ} + 0,5^{\circ} + 0,75^{\circ}$

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Spring pre- (torque-co	Fuel delivery	Difference	45-2,65) Fuel delivery		Rotational
valve)	Checking values	in fuel delivery	Average value	rod travel	speed
	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	mm	min-1
 	5	4	3	2	1
	510,0-526,0	22,0(33,0)	513,0-523,0	18,0+0,1	600
	135,0-165,0	12,0(18,0)	140,0-160,0	9,0-9,1	600
	67,0-97,0	11,0(16,0)	72,0-92,0	9,0-9,1	300

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium ra	ted spec	ed	Lower rat			Torqu	e control
Control lever deflection degrees 1	MM min-1 2	Control- rod _1 mayel mm 3	Control lever flection degrees	m :n :1 5	Control- rod travel mm 6	Control lever de- flection degrees 7	min-i 8	Control- rod travel mm 9	min-1 10	Control- rod travel mm 11
ca. 84	1200 17,0 4,0 1400	1205-1225 1320-1380	-	200 300 500	8,0 14,3-17,2 10,3-11,8 2,5-3,7 720=0		300 200 400 485-	8,0 10,8-14,2 3,9-5,0 90=0	-	-

Torque control travel dimension a =

mm

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever il temperature 40°)	Control rod stop at speed	Fuel-de charact		Starting fuel delivery		
min-1	cm ³ /1000 strokes 2	min: 3	min=+ 4	cm ³ /1000 strokes 5	min ·) 6	cm³/1000 strokes 7	
	known. ry out adjustme	nt on engine.					

Checking values in brackets

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 26,5 b

1. Edition

PE 8 ZW 160/120 RS 1027/11 RQUV 300-1200 ZWA 51 R Komb.-Nr. 0 402 438 024 1-2-6-3-4-5-7-8 je $45^{\circ} \pm 0,5^{\circ}(\pm 0,75^{\circ})$ RQUV 300-1200 ZWA 51 R

Replaces Firm: MTU

Engine 331

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min-1	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
600 600 300	18,0+0,1 9,0-9,1 9,0-9,1	513,0-523,0 140,0-160,0 72,0-92,0	16,0(24,0) 12,0(18,0) 11,0(16,0)	510,0-526,0 135,0-165,0 67,0-97,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees 1	mm min-1 2	Control- rod -1 travel mm 3	Medium ra Control lever flection degrees 4	ted spee min-1 5	ed Control- rod travel mm 6	Lower rat Control lever de- flection degrees 7		i Control- rod travel mm 9		e control Control- rod travel mm 11
ca.84	1200 17,0 4,0 1400	1205-1225 1320-1380		375 200 300 500 590-	14,3-17,2 10,3-11,8 2,5-3,7		200 400 485-	8,0 10,8-14,2 3,9-5,0 590 = 0	-	-

Torque control travel dimension a =

C. Settings for fuel-injection pump with fitted governor

charact	livery eristics	deliver	g fuel y I
min-1 4	cm ³ /1000 strokes 5	min=1 6	cm ³ /1000 strok es 7
•		min-1 crm3/1000 strokes 5	min-1 4 cm ³ /1000 strokes min-1 6

Checking values in brackets

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 39,7 b 1

1. Edition

PE 12 ZW 150/120 RS 1010/11

ROUV 300-1200 ZWA 51 R

Replaces

Firm: MTU

1-12- 9- 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6

Engine: 12 V 331

 $0-45-60-105-120-165-180-225-240-285-300-345^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$ Komb.-Nr. 0 402 430 004

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing a Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min-1	mm 2	cm ³ /1000 strokes 3	cm ³ /1000 strokes 4	cm ³ /1000 strokes 5	
1000 600 300	18,0+0,1 9,0-9,1 9,0-9,1	479,0-507,0 131,0-451,0 70,0-90,0	15,0 (22,0) 16,0 (24,0) 10,0 (15,0)	494,0 - 510,0 126,0 - 156,0 65,0 - 95,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees 1	speed min-1 2	Control- rod travel mm 3	Medium ra Control lever flection degrees 4		ed Control- rod travel mm	Lower rat Control lever de- flection degrees 7		i Control- rod travel mm 9	 e control Control- rod travel mm
ca. 85	1200 1250 1300 1350 1420	18,0-21,0 12,2-16,8 6,4-11,6 0,4-6,4 0-2,0	ca. 30	250 375 500 600 730	12,2-14,6 6,0-7,2 2,6-3,7 0,8-2,1		150 300 400 570	4,3-16,1 7,3-8,6 2,8-4,3 0	-

Torque control travel dimension a =

C. Settings for fuel-injection pump with fitted governor

on gove	delivery mor control lever	Control rod stop at speed	Fuel-de charact		Starting fuel delivery		
	temperature 40°) cm³/1000 strok3s	min-1 3	min=+	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7	
Not Car	known. ry out adjustme	nt on engine.					

Checking values in brackets

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 2,4 m1 1. Edition

engine

En

PES 4 M 55 c 320 RS 107-1 RSF 375/2250 M 17

Komb Nr. 0 400 074 956

Sales model

0 400 074 957

supersedes =

company Daimler-Benz

OM 616

53 kW (72 PS)

1 - 3 - 4 - 2

0 -90 -180-270
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,20-2,30 (2,15-2,35)

mm (from BDC)

20 mm

Control rod travel

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm 2	cm ³ /100 strokes	cm³/100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1000	13,9 ^{+0,1}	3,9-4,0	0,25(0,3)			
375 1800 2200	6,5-6,7	0,6-0,7	0,1 (0,15) 0,25(0,3) 0,25(0,3)			
				•		

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

	ower rated speed			Opper rated speed			Variations in control rod travel Rotational Control		
deflection	Control rod travet	Rotational speed	Degree of deflection of control	Control rod travel	Rotational speed		speed	1	
of control lever	mm	rev/min	lever	mm	revimin		revimin	mm	
1	2	:3	4	5	6	7	8	9	
9-13 ①	min.11, max.11, 6,5-6,7	0 300	50 7	13,0-13 8,7-9,1 0-1,0		(12) (13) (14)	100 1800 1000	min. 20,3 13,3-13,5 13,9-14,0	
(4)	2 5	720-820	(1)		_	6	Switching p	oint	

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load o	np 40°C (104°F)	Full-load speed 8a regulation	Variations delivery	in fuel (17)	idle	uel delivery	, Differe	nce	
rev/min	cm³/1000 strakes	rev/min	rev/min	cm ³ /1000 strokes	ļ.	cm ³ /1000 strokes	cm ³ /10	000 strok	es
2200	39,5-41,5	2500* RW 8,7-9,1	1800	39,0-41,0 (38,0-42,0)	100	min. 53,0	6,0		(23)
	(38,5-42,5)	. KW 0,7-3,1	1000	39,0-40,0 (38,0-41,0)	375	6,0-7,0 (5,5-9,0)	1,0	See	(3)
					2500	23,0-27,0	,_	3 a	
g		i			i i	(22,0-28,0)	3,0		16

Checking values in brackets

Ca.: 4m2esxxxxirol rod travel than in Column 2

- 1. ** Set the idle auxiliary spring at n = 400 min⁻¹ so that the control-rod travel is exceeded by 0.1 0.2 mm.
- Setting the idle control-lever position:
 At 1000 min⁻¹, control rod travel 1.9 2.0 mm
- Control-lever position 47°. After change-over point up to 550 min⁻¹ no change in control-rod travel. Control-lever position 30°. Speed range 350 min⁻¹ 450 min⁻¹
- 4. Check the pneumatic shutoff box

Control lever at idle stop. At $n = 375 \text{ min}^{-1}$ and pu = 450 mbar (vacuum) (338 mmHg) the control rod must return quickly to control-rod travel = 0 mm.

WPP 001/4 MB 2,4 11

engine

1. Edition

PES 4 M 55 C 320 RS 107-1

RSF 375/2250 M 18

Komb.Nr. 0 400 074 961

! Sales model

0 400 074 958

En

supersedes -

Daimler Benz company

OM 616

53 kW (72 PS)

1-3-4-2

0-90-180-270 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,20-2,30 (2,15-2,35)

mm (from BDC)

20 mm

Control rod travel

rev/min 1	Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
1000	rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	നന
375 1800 6,5-6,7 0,6-0,7 0,1(0,15) 0,25(0,3)	1	2	3	4	2	3	6
1800 0,25(0,3)	1000	13,9+0,	3,9-4,0	0,25(0,30)		·	•
	1800	6,5-6,7	0,6-0,7	0,25(0,3)			

Set uniform delivery according to the values in

Checking values in Drackets

B. Governor Settings

Lower rated sp	eed		Upper rated sp	eed		Variations in co	ntrol rod trav	/et
		Rotational speed	Degree of deflection	Control rod travel	Rotational speed	\$ 1 1	Rotational speed	Control rod travel
of control lever	mm	rev/min	of control lever	mm	rev/min		rev/min	mm
1	2	3	4	5	6	7	8	9
9-13 ① ② ③ ④ ⑤	min.11, max.11, 6,5-6,7 ** - 2,5	0 300	50 (7)(8)(9)(1)(1)	0-1,0	2500	(2) (3) (4) (6)	1800 1000 Switching p	min.20,3 13,3-13,5 13,9-14,0

C. Settings for Fuel injection Pump with Governor Mounted

Full-load de		Full-load speed 8a	Variations delivery	$\underline{\psi}$	idle	uel delivery	Difference	:
revimin	np 40°C (104°F) cm ³ /1000 strokes 2	rev/min 3	revimin	cm ³ /1000 strokes	revimin	cm ³ /1 000 strokes	cm ³ /1000 strol	kes
2200	39,5-41,5 (38,5-42,5)	2500* RW 8,7-9,1	1800	39,0-41,0 (38,0-42,0)	100	min. 53,0	6,0	·2a)
			1000	39,0-40,0 (38,0-41,0)	375	6,0-7,0 (5,5-9,0)	1,0	(ড)
			1	<u> </u>	2500	23,0-27,0 (22,0-28,0)	2,5 See 3,0 8 a	(16)

Checking values in brackets

Ca. 4 per les proprior rod travel than in Column 2

5.83

BOSCH

- 1. ** Set the idle auxiliary spring at n = 400 min⁻¹ so that the control-rod travel is exceeded by 0.1 0.2 mm.
- 2. Setting the idle control-lever position: At 1000 min⁻¹, control rod travel 1.9 - 2.0 mm
- Control-lever position 47°. After change-over point up to 550 min⁻¹ no change in control-rod travel. Control-lever position 30°. Speed range 350 min⁻¹ 450 min⁻¹
- 4. Check the pneumatic shutoff box
 Control lever at idle stop.
 At n = 375 min⁻¹ and pu = 450 mbar (vacuum)

At n = 375 min⁻¹ and pu = 450 mbar (vacuum) (338 mmHg) the control rod must return quickly to control-rod travel = 0 mm.